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THE MERCHANT NAVY



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H.R.H. THE PRINCE OF WALES.

[Frontispiece

HISTORY OF THE GREAT WAR

BASED ON OFFICIAL DOCUMENTS

BY DIRECTION OF THE HISTORICAL SECTION OF THE
COMMITTEE OF IMPERIAL DEFENCE

THE MERCHANT NAVY

Vol. III

BY
SIR ARCHIBALD HURD

WITH A FOREWORD BY
H.R.H. THE PRINCE OF WALES
MASTER OF THE MERCHANT NAVY AND FISHING FLEETS

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FOREWORD

As Master of the Merchant Navy and Fishing Fleets, I welcome the opportunity offered me by Sir Archibald Hurd of contributing a few introductory remarks to the volume which completes the history, based on official documents, of the magnificent part played by British Merchantmen in the Great War. It has been my fortunate lot to be a world-wide traveller and I have encountered the British liner and tramp not only on every sea but in many a port in both hemispheres. The sight of the Red Ensign has, in these later days, given me a thrill of a very special kind, for that familiar piece of bunting can never fail to recall the wonderful record of our merchant seamen throughout the struggle of four and a half years.

The present volume raises the curtain on what I take to have been the climax of that vast drama—the enemy's plunge into unrestricted submarine warfare on our merchant shipping. Thus was provided the final test of a heroism and endurance unparalleled in history, and how magnificently our seamen responded to the test is to be found chronicled in these pages. To view that record in its proper perspective, it is well to recall those days at the very outbreak of war which already seem to some of us to be almost lost in the mists of time.

The participation of our seamen in the struggle began with the operations of the German raiders. There was nothing surprising or unprecedented in the destruction achieved by the Emden and other German cruisers and armed merchantmen in Eastern waters and elsewhere. Hostilities were conducted in harmony with principles laid down by international law, and, though many valuable ships were sunk, the toll was no greater than might have been expected, and not a single life of the captured crews was sacrificed. The British seaman recognised that nothing more was being asked of him than to accept the

usual hazards of a naval conflict. It was a phase of the war, in short, in which the dictates of humanity were strictly regarded, and every reasonable consideration was shown to the passengers and crews of the vessels unlucky enough to be taken.

This phase, however, was short-lived. With the arrival on the scene of the submarine and the indiscriminate use of the mine, the whole position for the merchant seaman was changed. He found himself faced by hazards and perils such as he had never before experienced, or indeed had ever conceived as possible. With the intensification of the enemy's campaign, the British sailor, a non-combatant following an ordinarily peaceful avocation, saw himself directly involved in the whole frightful mechanism of war, whose grim operation, as I have said, reached its climax in the phase of unrestricted submarine attack recorded in detail in this third volume of the history.

Let us who are land-dwellers not mince words over this thing. It is the glory of our Merchant Navy, and will be so acclaimed by generations to come, that they faced without hesitation the tremendous odds and the frequent hazard of death, undaunted in spirit to the bitter end. Let us not forget, also, that had it been otherwise this country of ours must have perished.

One highly characteristic phase of the work of our Merchant Navy, described in this volume, is that covering the activities of the Auxiliary Patrol. I imagine the Auxiliary Patrol was one of the most striking, as it certainly was one of the most successful, of the many pieces of war-time improvisation which history will place to the credit of the British nation. It was born, as need hardly be recalled, out of those new conditions of submarine attack and indiscriminate mine raids to which I have referred, and it gradually evolved into a vast supplementary fleet.

Here was indeed a medley of small vessels—trawlers fresh from our fishing grounds, drifters, whalers, paddle-steamers so familiar to Channel excursionists, steam yachts so well known in the Solent, motor-launches and motor-boats. Their hazardous duties were as varied as their types. In their long hours of patrol they watched for and hunted German submarines; they searched for and dragged mines; they fought hostile aircraft; they controlled and examined millions of tons of shipping navigating

the Narrow Seas ; and in many other ways splendidly seconded the efforts of the Grand Fleet. Varied indeed these craft were in type, but their crews were animated by one heart and one spirit. As time went on, this collection of ships was welded into a great disciplined service of 4,000 vessels with its operations extending as far north as the White Sea, to the Mediterranean and Ægean in the south, and westward to the West Indies. The Auxiliary Patrol was in its days of complete development manned by nearly 50,000 officers and men.

The figures representative of the full war effort of the merchant service as a whole would make staggering totals. Therein it was carrying on and even bettering the tradition of centuries. On Tower Hill a fitting and impressive memorial, bearing the names of the officers and men of the Merchant Navy and Fishing Fleets who have no grave but the sea, and who died that this country might live, was unveiled by Her Majesty the Queen on December 12. It has been erected by the Governments of the peoples of the whole Empire as a tribute, to last for all time, to these men's heroic services.

It has been said that two-thirds of the Elizabethan fleet which met so triumphantly the shock of the Spanish Armada were merchant vessels, and that the proportions of the force with which Drake "singed the King of Spain's beard" were much the same. The relations of the two great Services have altered since those days, but the Great War has served to prove once more that the Merchant Navy is as essential to-day as ever it was to the operations of the Royal Navy and to the safeguarding of the life of the British Commonwealth of Nations.

EDWARD P.

*Master of the Merchant Navy
and Fishing Fleets.*



PREFACE

THE Prince of Wales has graciously written a Foreword to this final volume of the Official History describing the part which the merchant seamen and fishermen of this country took in the Great War. His Royal Highness not only pays tribute to their loyal and heroic services, but also passes in rapid review the varied character of the work which they performed at sea. It would be almost an impertinence to attempt to supplement his words of appreciation.

It is sufficient to state that the present volume covers the history of the Merchant Navy from the beginning of the unrestricted submarine campaign to the conclusion of hostilities. No attempt has been made to describe or analyse the strategical or tactical problems ; these matters are dealt with in the other Official Histories. This volume is concerned only with the manner in which the uncovenanted seamen of this country confronted the final ordeal to which the enemy, in desperation, submitted them.

When, in the month of April 1917, British shipping of upwards of half a million tons was lost from all causes and vessels under all flags of 881,000 tons were sunk, it seemed as though the Allied cause might, after all, be defeated, as the Germans had foretold, by their mines and torpedoes. That this disaster was averted was due to two causes—the doggedness and courage of the officers and men of the sea services, naval and mercantile, and the persistence and ingenuity which were exhibited by the Admiralty in devising defensive and offensive measures and in perfecting the convoy system. It was an especially bold, and, in some respects, dangerous expedient to bring all shipping under one control in order that it might be shepherded from port to port. Merchant officers, unused to “sailing in company,” were required to keep station, but were doubtful as to their ability to do so.

The incomparable seamen of the Merchant Navy of all ranks and ratings, as these pages record, responded completely and nobly to every demand which was made upon them.

There was only one way in which to treat this subject in its many aspects, and that was to select episodes illustrative of the main theme, or rather themes, to set out those incidents in their order of occurrence, to quote textually from the statements of masters and men wherever possible, and to reduce comment to a minimum, in order that the facts might stand out in their strongest possible outline. This history contains inevitably only a selection of such incidents. It has not been possible to describe every act of bravery, every loss, or every successful escape. If an attempt had been made to do anything like justice to the fine record of the men of the Merchant Navy and Fishing Fleets, not three, but many volumes would have been necessary. It has been possible only to extract from the official records such outstanding occurrences as would, when presented in proper sequence, convey to posterity an adequate conception of the signal services which these men rendered not only to this country, but to all the Allied countries during the Great War.

This history will have been written in vain if it does not show conclusively that, had it not been for the devotion, initiative, and hardihood of these merchant seamen and fishermen, the war fleets could not have fulfilled their mission, and the armies of the Allies, so widely distributed, would have failed in their purpose, not from lack of valour but from want of supplies of food and munitions. "An army," it has been said, "moves on its belly," but the army of an island country must necessarily move in ships to its place of action, and the unique characteristic of the Great War was the distances which armies and munitions had to be transported by sea in face of unparalleled dangers.

It was necessary, in one instance, to depart slightly from the general method of treatment. No such history would have been adequate if it had contained no reference to the work performed by the Tenth Cruiser Squadron which was associated with the Grand Fleet and became therefore a part of the Royal Navy. The duties of the Squadron were monotonous to a degree; stirring incidents rarely interrupted its routine of hardships; and to have dealt only with the few incidents which did occur would

have done scant justice to the officers and men, drawn in the main from the Merchant Navy, whose fortitude and sense of duty enabled miracles to be performed. In justice to them, the military significance of the work which they performed has been lightly touched upon.

Nor was it possible to ignore the sinking of hospital ships in circumstances without parallel in former wars. Throughout the campaign of the enemy against men wounded in action or suffering from sickness, neither the seamen, the medical staffs, nor the nurses, women protected alike by the Red Cross and by the code of humanity, flinched from the ordeal.

A chapter is devoted to the sufferings of Merchant Seamen who fell into the hands of the enemy while performing their duties afloat. It is well that posterity should be reminded that many officers and men of the Merchant Navy spent two or three, and in some cases four years of their lives behind the barbed wire of the prison camps in Germany. The majority of them were not only exposed to many indignities and wanton acts of cruelty, but were supplied with inadequate food and suffered hardships so barbarous in their character as to be almost unbelievable, were it not for the unimpeachable records which have been drawn upon for the purpose of writing this portion of the history. It is an act of justice that some record should be preserved of sufferings which cost many of these men their lives and left many others maimed and broken to the world.

It is impossible to part from this history without paying a tribute to the assistance which has been generously given by the Admiralty, and the Board of Trade, and in particular by the Secretary and Staff of the Historical Section of the Committee of Imperial Defence. The completion of the task of writing this history was delayed by illness and other unavoidable circumstances, and to Colonel E. Y. Daniel and Lieutenant-Commander A. Colquhoun Bell cordial thanks are especially due for the manner in which they co-operated to complete the task of several years.

ARCHIBALD HURD.

January, 1929.

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THE MERCHANT NAVY

CHAPTER I

THE INTENSIVE SUBMARINE CAMPAIGN (I)

February—April, 1917

ON January 31st, 1917, the German Emperor, in a message to the Chief of the Naval Staff, issued an order which changed the course of the war by sea and by land. "I command that the unrestricted U-boat campaign shall begin on February 1st in full force." The Emperor was, by his decision, interpreting without doubt the will of the majority of the people of the German Empire, as well as reflecting the determination of the naval and military leaders. The Imperial Chancellor, impressed by the political dangers associated with this step, had opposed it as long as he could. He regarded submarine warfare, conducted without restraint, as "the last card," and he was convinced that the time had not come for playing it. It was an act of desperation, as Dr. Bethmann-Hollweg realised. Even when overborne by the leaders of the fleet and army, he consented very unwillingly to the avowal of a change of policy, and, as events were to prove, his opposition on grounds of political expediency was fully justified.

The Battle of Jutland had been fought and, in spite of the claim to victory which had been made in Germany in the hope of impressing neutrals, it was realised that the High Seas Fleet, with its crews showing increasing signs of disaffection, could do nothing to affect the issue of the war. The Allies had fought the armies of the Central Powers to a standstill; the hopes of the German military leaders had sunk to zero, and even Hindenburg confessed that "the position could hardly be worse." The economic blockade, maintained by the Allied naval forces with increasing rigour, was subjecting Germany her and consorts to a measure of constriction which was affecting

the spirit of soldiers and sailors, as well as of the civil population.

As the year 1916 drew to a close, the naval and military leaders had met, and subsequently the Emperor presided over a conference, which was also attended by the Imperial Chancellor. The result was a foregone conclusion. "The people and the army," it was declared, "were crying out for the unrestricted U-boat war." The High Naval Command urged that, although the political risks were not negligible, this intensification of the submarine war offered to Germany and her Allies "the one and only hope of victory," since the negotiations for peace—of course on Germany's terms—had failed, and confidence that President Wilson would speedily intervene had disappeared. The flickering hopes which led to the decision to abandon all pretence of conducting the submarine campaign in accordance with Prize Law, were supported by the steady increase in the sinkings of merchant shipping which had occurred throughout the latter half of 1916. In June the world total had amounted to 108,855 tons, and in October, November, and December, when the submarine commanders increasingly ignored the Prize Law, it had mounted up to approximately 340,000 tons a month, while in January 1917 there was a further advance to 368,521 tons—almost entirely due to submarines and mines.

The downfall of the Asquith administration, in association with these successes at sea, led to the belief that the declaration of an intensive campaign would have important psychological effects on all the Allied nations, and would be regarded by neutrals as a sign that Germany, conscious of the risks associated with the decision, was so strong that she could afford to take them. Admiral von Holtzendorff, Chief of the Naval Staff, confidently predicted that over 4,000,000 tons of shipping, including 3,000,000 tons sunk, would be lost to Great Britain in five months, and that she would in consequence be brought to her knees. In face of the Emperor's attitude, supported by the leaders of the army and navy, the Chancellor, at last, conceded that the prospects for unrestricted submarine warfare were "very favourable." On that assumption, the Emperor's order for the intensive campaign to begin was put into effect, and the momentous announcement of the last day of January followed. Ships carrying passengers

as well as ordinary cargo vessels came forthwith under the ban. Hopes ran high that terror would speedily spread among the crews of neutral shipping, which had become essential to the efficient conduct of the war by the Allies, and that tonnage would be laid up in increasing volume, even if British seamen were not similarly intimidated.

The advice which the German Naval Staff had pressed upon the Emperor and all concerned with the direction of policy was based upon the knowledge that 111 submarines would be available for prosecuting the intensive submarine campaign. Experience had shown, however, that only about one-third of the vessels could be maintained at sea at any one time. Two out of every three boats were always "resting," either undergoing repairs or giving leave to their hard-pressed crews. Consequently, of the 111 submarines only about 38 would be available for service at sea on February 1st, but this number was held to be sufficient for a beginning; 23 submarines were operating in the North Sea, 5 in the Adriatic, 9 from the bases on the Flanders coast, while one was working from Constantinople. The Germans had put in hand a large programme of construction and the Naval Staff were satisfied that they would not only be able to make good any losses which might be sustained, but would rapidly increase the number operating at sea. They under-estimated, however, as subsequent months were to reveal, the increasing efficiency of the defensive measures which had been adopted by the British naval authorities, and copied by the French and Italians. But the most serious error of judgment of which they were convicted was as to the influence which the German declaration would have upon the United States, and the importance of the assistance which the Americans, in spite of the great distance across the Atlantic, would render the Allies, not only in the joint conduct of the war on land, but in the operations by sea.

The first round in the new struggle for the command of the sea went to the Allies, for immediately the German declaration reached Washington diplomatic relations with Berlin were severed, and this was followed in April by a declaration of war. Consequently Germany embarked upon her new and desperate course with the knowledge that, whatever effect her declaration might have on other countries, it had definitely arrayed against her the American

people with their vast resources of man power. It was, however, some time before America could intervene in the struggle, and meanwhile the main responsibility of countering the enemy's efforts to obtain dominion of the sea fell upon the British Navy and the British Mercantile Marine. Though the blow had not been unexpected, the date when the Germans would put their plans into operation had remained uncertain, and it was consequently difficult for the British naval authorities to apportion, in advance of the opening of the intensive submarine campaign, the resources which the situation might demand. The naval authorities were, moreover, embarrassed by the urgent claims of the new army, as well as the Air Force, on the war-mobilised industries of the country, and fresh material was also required for the development of a new offensive on the Western front.

In these circumstances the intensive submarine campaign opened on February 1st when the little steamer *Essonite* (589 tons) was torpedoed without warning three miles N.N.W. from Trevoise Head, with the loss of ten lives. On the following day the sailing vessel *Isle of Arran* (1,918 tons) was captured and sunk 100 miles S. from the Old Head of Kinsale. From this time onward the Germans pressed the British Mercantile Marine hard, and the losses from day to day began to mount up in alarming fashion. On February 3rd the ruthlessness with which the campaign was to be conducted was illustrated by the fate of the steamer *Evestone* (1,858 tons). This vessel was on her way to Gibraltar when, 95 miles W. from the Fastnet, she sighted a submarine just before noon. The enemy opened fire at 3,000 yards, evidently in order to find the range. In this he soon succeeded, and firing continued at the rate of a shot a minute. The steamer was repeatedly struck; even when the crew were taking to the boats firing was not suspended. When the boats had dropped astern of the ship, the submarine turned her gun upon them at short range, firing three shrapnel shells. The third shot killed outright the master, the steward, and the donkeyman, besides wounding two able seamen and the second officer. The incident showed that, when reference had been made by the enemy to the "unrestricted" character of the campaign, it was intended to convey to the world that the Germans would pay no regard, either to the regula-

tions of the Prize Law, or to the ordinary dictates of humanity. Shortly after this deliberate slaughter of defenceless seamen, the first mate of the *Evestone* was called on board the submarine and closely questioned. No enquiries were made as to the losses sustained, and no suggestion was made that help might be given to the wounded. The survivors of the crew, with their dead, were left to the mercy of the sea. Fortunately the boats were picked up the same night by the Norwegian barque *Regina*.

Within the next few days upwards of a dozen other ships were sunk off the Fastnet, some of them without warning, while in other cases the vessels were captured before being destroyed, and prisoners were taken. The biggest of these vessels was the Anchor liner *California* (8,669 tons), which was passing the Fastnet on her way from New York, when she was sunk out of hand, thirteen of her passengers as well as thirty-two of the crew being drowned. At this period another submarine was active off Spurn Point. Late at night she chased the steamer *Hanna Larsen* (1,311 tons) and eventually captured her. As soon as fire was opened on the *Hanna Larsen*, the master (Mr. Thomas Reid) stopped the ship, ordered full speed astern, and had the boats prepared for lowering. Four shots in all had been fired, and then, as nothing could be seen of the enemy, Captain Reid decided to resume his voyage. A few minutes afterwards another shot was fired from somewhere on the starboard quarter, and the engines were again stopped. Firing continued, the vessel being hit in several places, and the steam-pipe having apparently been severed, the bridge was enveloped in steam. Under continuous fire, the crew took to the boats, four men being wounded during the operation. Then at last the enemy appeared, bombs were placed in the *Hanna Larsen*, the master and chief engineer were taken prisoners, and the rest of the crew were left to fend for themselves.

The experiences of Captain Reid and the chief engineer on board the submarine, which proved to be the UC39, supplied testimony to the spirit in which the campaign was being prosecuted by the enemy. The following morning the submarine sighted the Norwegian steamship *Ida*. Immediately fire was opened, and the merchant ship stopped. The German gunlayer, on inquiring whether

he should cease firing, was told by the commander to carry on. Altogether no fewer than twenty-five rounds were discharged. When at last fire stopped, one of the *Ida's* boats came alongside the submarine and reported that two men had been left on board the steamer. A German officer and three men were sent on board and found the mate and a steward lying dead on the deck, where they had been killed while engaged in lowering the boats. The *Ida* was forthwith sunk by bombs. Two hours later the UC39 opened fire on a steamer and a trawler, but on diving to attack lost them in the mist. When she next came to the surface, intending to sink another steamer which had been sighted, her fire, to the surprise of all on board, was answered by a destroyer. She dived, but not quickly enough, for a depth charge struck her, with the result that water poured into her conning tower and control room, causing a panic among the crew. The situation was critical. The commander had no alternative but to rise to the surface, where he came immediately under fire of the destroyer. He was climbing out of the conning tower hatch, apparently with the intention of surrendering, when he was killed by a shell. The submarine was still under way, and the intention of those on board was still uncertain, so the destroyer continued firing, with the result that the engineer, who had come on deck with the sub-lieutenant, was wounded.

All this time Captain Reid, in company with his chief engineer, was down below, listening to what was happening on deck. He came to the conclusion that he had better show himself and so he went on deck and, waving a white handkerchief, shouted: "We are two Britishers taken prisoners last night." The scene on board the submarine was a remarkable one; those men of the submarine's crew who had not jumped overboard or been killed during the encounter, were standing along the deck with their hands up, while a short distance away lay the British destroyer. In this wise, the career of the UC39 came to an end, seventeen of the survivors of her crew being taken prisoners. In due course Captain Reid and his companion, none the worse for their experiences, were landed at Immingham. Even at this early date of the intensive campaign, the German scamen, as the master of the *Hanna Larsen* afterwards related, were far from confident

of the result of the adventure upon which the German Government had entered, and the survivors were not loth to find safety on board the British destroyer even as prisoners.

Day by day throughout the month of February the Germans continued to take more toll of the British mercantile marine, as well as of neutral shipping. The heaviest loss of life occurred when the Clan liner *Clan Farquhar* (5,858 tons) was sunk without warning 80 miles N. from Ben Ghazi. No fewer than forty-nine lives were lost. The *Rosalie* (4,237 tons), which like the *Clan Farquhar* was defensively armed, went down off the Algerian coast, the master and twenty of the crew, out of a total complement of thirty, being drowned. But the outstanding event of these days of ordeal to which all who hazarded their lives at sea were exposed, was the sinking of the Cunard liner *Laconia* (18,099 tons). She was 160 miles N.W. by W. from Fastnet when at 9.20 on the night of February 25th an explosion occurred. Everything which human ingenuity and vigilance could suggest to ensure the safety of the seventy-seven passengers and the crew, numbering 217, had already been done. As soon as Captain W. R. D. Irvine realised that his ship had been torpedoed, he ordered the boats to be manned; at the same time he took way off the ship and an S.O.S. signal was sent out. Good order prevailed, passengers and crew taking to the boats in accordance with the routine which had been rehearsed earlier in the voyage. The *Laconia* was already sinking, when a second torpedo struck her on the star-board side, and, within less than an hour from the time of the first explosion, the liner had sunk out of sight. What did the ship matter? The tragedy consisted in the sacrifice of twelve lives, and the circumstances in which they had been lost.

By the end of this first month of the unrestricted campaign no fewer than 86 British ships of a tonnage of 256,394 had been destroyed by submarines, and 355 seafarers had been required to surrender their lives. The action of enemy cruisers and torpedo boats and mines brought the total up to 105 ships of 313,486 tons and the death roll to 402. Neutrals had also suffered heavily; the total loss under all flags having mounted up to 540,006 tons.

The experiences during February proved, however,

merely a foretaste of the fury of the enemy which was to prevail during the succeeding months of the spring and summer. In March the British Mercantile Marine was deprived of 353,478 tons by enemy action, and the number of lives lost rose to 699, while the Allied and neutral losses were over 240,000 tons. Sixty-two of the British ships which encountered enemy submarines during these weeks were sunk without warning. Not merely were the officers commanding denied the scant consideration provided for under the provisions of Prize Law, but they and their men were treated with a ruthlessness which in pre-war days would have been regarded as beyond the bounds of the human conscience. Day by day the death roll continued to mount up, and no doubt the enemy extracted from the reports which came in from the sea fresh encouragement to continue the campaign in all its ferocity.

On the first day of the month, the *Drina* (11,483 tons) was torpedoed without warning and 15 of her crew went down with her; two days later the *Sagamore* (5,197 tons) shared the same fate, the master and 51 of his companions being killed; on the 17th the *Antony* (6,446 tons) was sunk with a loss of 55 lives; and then occurred the destruction of the Union Castle liner *Alnwick Castle* (5,900 tons). The moving story of the loss of this ship was told some days later in sailor-like language by the master (Mr. Benjamin Chave). She was about 320 miles W. $\frac{1}{2}$ S. from the Bishop Rock. She had on board, besides her crew numbering 100 and 14 passengers, the captain and 24 men of the collier transport *Trevose*, who had been rescued from their boats on the previous evening after their ship had been torpedoed. In the darkness of the morning—at 6.10 a.m.—of March 19th, Captain Chave was drinking his morning cup of coffee when an explosion occurred, a column of water and debris being blown high in the air, and then falling on the bridge where the chief officer and the fourth officer were on duty. All the precautions which Captain Chave had adopted—the placing of look-outs in all the usual positions, and the steering of zigzag courses—had been unavailing. It was apparent that the ship was doomed. So the engines were put full speed astern and all the six boats were safely launched and left the ship which, short as had been the interval since the torpedo struck her, was rapidly sinking by the head.

The records of these days of supreme ordeal by sea contain no more moving story than the report which Captain Chave made to the owners of the *Alnwick Castle* nine days later, when he was safely on board the French steamer *Venezia*. After describing the circumstances in which the ship was torpedoed and the boats were got away, this officer stated :

"The forecastle was now (6.30 a.m.) just dipping, though the ship maintained an upright position without list. The people in my boat were clamouring for me to come, as they were alarmed by the danger of the ship plunging. The purser informed me that everyone was out of the ship, and I then took Mr. Carnaby from his post, and we went down to No. 1 boat and pulled away. At a safe distance we waited to see the end of the *Alnwick Castle*. Then we observed the submarine quietly emerge from the sea, end on to the ship, with a gun trained on her. She showed no periscope—just a conning tower and a gun as she lay there—silent and sinister. In about ten minutes the *Alnwick Castle* plunged bow first below the surface, her whistle gave one blast and the main topmast broke off; there was a smothered roar and a cloud of dirt, and we were left in our boats, 139 people, 300 miles from land. The submarine lay between the boats, but whether she spoke any of them I do not know. She proceeded N.E. after a steamer which was homeward bound, about four miles away, and soon after we saw a tall column of water, and knew that she had found another victim.

"I got in touch with all the boats, and from the number of their occupants, I was satisfied that everyone was safely in them. The one lady passenger and her baby of three months old was with the stewardess in the chief officer's boat. I directed the third officer to transfer four of his men to the second officer's boat to equalise the number, and told them all to steer between east and E.N.E. for the Channel. We all made sail before a light westerly wind which freshened before sunset, when we reefed down. After dark I saw no more of the other boats. That was Monday, March 19th.

"I found only three men who could help me to steer, and one of these subsequently became delirious, leaving

only three of us. At 2 a.m., Tuesday, the wind and sea had increased to such a force that I deemed it unsafe to sail any longer ; also it was working to the N.W. and N.N.W. I furled the sail and streamed the sea anchor, and we used the canvas boat cover to afford us some shelter from the constant spray and bitter wind. At daylight we found our sea anchor and the rudder had both gone. There was too much sea to sail ; we manœuvred with oars, while I lashed two oars together and made another sea anchor. We spent the whole of Tuesday fighting the sea, struggling with oars to assist the sea anchor to head the boat up to the waves, constantly soaked with cold spray and pierced with the bitter wind, which was now from the north. I served out water twice daily, one dipper between two men, which made a portion about equal to one-third of a condensed milk tin. Fortunately I had made a practice of keeping in the boats a case of condensed milk, a case of beef, two tins of biscuits, and a skein of amberline and some twine and palm and needle, besides the regulation equipment ; also I had provided a bundle of blankets for each boat. We divided a tin of milk between four men once a day, and a tin of beef (6 lb.) was more than sufficient to provide a portion for each person (twenty-nine) once a day."

It must have seemed to the passengers at least, if not to the seamen, that their chances of surviving were small. The captain of the enemy submarine had shown no mercy, but had left them to their fate. They were confronted in small boats with all the unchained forces of nature, and it would have been small wonder if some of the survivors had abandoned themselves to counsels of despair. But Captain Chave's narrative reveals in glowing terms the manner in which these men and women, belonging to a seafaring race, maintained the highest British traditions :

" At midnight Tuesday-Wednesday, the northerly wind fell light, and we made sail again, the wind gradually working to N.E. and increasing after sunrise. All the morning and afternoon of Wednesday we kept under way until about 8 p.m., when I was compelled to heave to again. During this day the iron step of our mast gave way and our mast and sail went overboard, but we saved them, and were able to improvise a new step with the aid of an axe and

piece of wood fitted to support the boat cover strongback. We were now feeling the pangs of thirst, as well as the exhaustion of labour and exposure and want of sleep. Some pitiful appeals were made for water. I issued an extra ration to a few of the weaker ones only.

"During the night of Wednesday-Thursday the wind dropped for a couple of hours, and several showers of hail fell. The hailstones were eagerly scraped from our clothing and swallowed. I ordered the sail to be spread out in the hope of catching water from a hail shower, but we were disappointed in this, for the rain was too light. Several of the men were getting light-headed, and I found that they had been drinking salt water in spite of my earnest and vehement order.

"It was with great difficulty that anyone could be prevailed on to bale out the water which seemed to leak into the boat at an astonishing rate, perhaps due to some rivets having been started by the pounding she had received.

"At 4 a.m. the wind came away again from N.E. and we made sail, but unfortunately it freshened again and we were constantly soaked with spray and had to be always baling. Our water was now very low, and we decided to mix condensed milk with it. Most of the men were now helpless, and several were raving in delirium. The foreman cattleman, W. Kitcher, died, and was buried. Soon after dark the sea became confused and angry; I furled the tiny reefed sail and put out the sea-anchor. At 8 p.m. we were swamped by a breaking sea, and I thought all was over. A moan of despair rose in the darkness, but I shouted to them to bale, bale, bale, and assured them that the boat could not sink. How they found the balers and bucket in the dark, I do not know, but they managed to free the boat while I shifted the sea-anchor to the stern, and made a tiny bit of sail, and got her away before the wind. After that escape the wind died away about midnight, and then we spent a most distressing night. Several of the men collapsed, and others temporarily lost their reason, and one of these became pugnacious and climbed about the boat, uttering complaints and threats. The horrors of that night, together with the physical suffering, are beyond my power of description.

"Before daylight, however, on March 23rd, the wind

permitting, I managed, with the help of the few who remained able, to set sail again, hoping now to be in the Bay of Biscay and to surely see some vessel to succour us. Never a sail or wisp of smoke had we seen."

Landsmen, impressed by the large number of ships which are always at sea, are apt to conclude that the sea is covered with ships, and that at any point on either of the great trade routes the welcome sign of a whiff of smoke from some friendly steamer is certain to appear within a few hours if disaster should overtake them. The experiences of the passengers and crew of the *Alnwick Castle* should correct that false impression. As soon as the ship was struck, the wireless officer (Mr. Carnaby) had repeatedly sent out S.O.S. signals, but though the position of the ship was given, no succour arrived. Day after day the horizon was unbroken by the appearance of any vessel, and it is small wonder in the circumstances that Captain Chave, devoting all his seamanlike skill to the navigation of the boats, at last found himself surrounded by human beings who could no longer sustain the physical and mental agonies to which they had been submitted.

"When daylight came the appeals for water were so angry and insistent that I deemed it best to make an issue at once. After that had gone round, amid much cursing and snatching, we could see that only one more issue remained. One fireman, Thomas, was dead; another was nearly gone; my steward, Buckley, was almost gone, and we tried to pour some milk and water down his throat, but he could not swallow. No one could now eat biscuits, it was impossible to swallow anything solid, our throats were afire, our lips furred, our limbs numbed, our hands were white and bloodless. During the forenoon, Friday, March 23rd, another fireman, named Tride, died, and my steward, Buckley, died, also a cattleman whose only name I could get was Peter, collapsed and died about noon."

Not until early on the afternoon of Friday, March 23rd, did the French steamer *Venezia*, appear on the scene. A swell was running, and in their enfeebled state Captain Chave and his companions were unable to manœuvre their boat alongside the French vessel. But Captain Bonafacie proved equal to the occasion, handling his vessel

with the greatest skill, and then, leaving the four dead bodies in the boat, the twenty-four survivors, too weak to climb the ladders, were hoisted with ropes, one by one, until they were all on board. This story of the sinking of the Union Castle liner would be incomplete without Captain Chave's tribute to the reception which he and his companions met with on board the *Venezia*.

"I cannot speak with sufficient gratitude of the extreme kindness and solicitation which was shown us by all on board. Our wet clothes were at once stripped off and dry ones put on, hot tea with cognac was poured down our parched and swollen throats, then we were put to bed in steam-heated first-class cabins. Our feet and hands were swollen to twice the normal size, and several of us narrowly escaped frostbite. In the evening we were given a light meal of soup and boiled beef with potatoes, with claret, and during the night the stewards were kept busy providing water for our unquenchable thirst. Every possible want was anticipated by the captain, officers, engineers, and stewards, who placed freely at our disposal their wardrobes, toilet articles, tobacco, etc."

On the same day as the *Alnwick Castle* went down, the *Frinton* (4,194 tons) was sunk with a loss of four lives, and in the next three days no fewer than seven other vessels suffered the same fate, being torpedoed without warning. The largest loss of life was in the case of the *Stuart Prince* (3,597 tons), when twenty persons, including the master of the ship, were sacrificed to the enemy's policy of frightfulness; the greatest loss in tonnage was the *Rotorua* (11,140 tons), a steamer of the New Zealand Shipping Company, which was sunk in the English Channel with her cargo of perishable food-stuffs from New Zealand. The last-named two ships were both destroyed on March 22nd, and day by day to the end of the month the tale of losses, both of personnel and tonnage, mounted up. On the 25th, five vessels were torpedoed and sent to the bottom without warning, the loss of life in the case of the *Queen Eugenie* (4,358 tons) alone being thirty-five persons, including the master.

On the 27th, between 8 and 9 p.m., the *Thracia* (2,891 tons) was torpedoed when on passage from Bilbao to

Ardrossan with a full cargo of ore. She was one of a string of twelve vessels being escorted by a French destroyer and two trawlers on a short stage from Belle Ile to Brest. They were steaming at night and anchoring during the day. The *Thracia*, which was a quarter or half a mile distant from the nearest vessels, was struck just forward of her stoke-hold. The explosion burst her boilers, killing outright an engineer, a greaser, and two firemen. The ship sank with appalling suddenness, and there was not time even to attempt the lowering of the boats. The crew numbered thirty-eight all told, and of these there were only two survivors. One was the gunner, who had time to put on a lifebelt, and was picked up after a short interval by a neutral steamer. The other was a cadet, named Dove, a boy of fifteen, who was acting fourth officer. This lad had been on watch with the chief officer till eight o'clock, and when the ship was struck was lying in his bunk reading. He put on a great-coat and went on deck, and as the ship was rapidly sinking he was thrown immediately into the water. The weather was intensely cold, with a north wind blowing, and the sea was very choppy. He succeeded in reaching an upturned boat, climbed on it, and lashed himself to it. Seven others of the crew also got on the boat, but were either washed off, or drowned while trying to swim towards a vessel which was seen. Three hours after the *Thracia* was sunk, a submarine came close up to the boat, and hailed the boy, who was now its only occupant. After asking him questions about the ship and its cargo, they called him an English swine, and threatened to shoot him. He replied, "Shoot away, and be damned to you," on which they said shooting was too good for him, and left him where he was, to drown. At eleven o'clock next morning he was picked up by a fishing boat, after thirteen hours in the water, and was later transferred to a destroyer. The official record states that when he was seen in Liverpool he was very shy, and his story had to be dragged out of him.

While in the great majority of cases the weapon used by the submarine was the torpedo, at least two of the smaller merchant ships destroyed at this time were sunk by gunfire. On the last day of March the sailing schooner *Primrose* (113 tons) was on voyage from Granville to

Fowey, when the master (Mr. Alexander Steele), who was below, heard the sound of a gunshot, and the mate reported having seen a flash on the port bow. Less than a minute afterwards a second shot was fired, and the conning tower of a submarine became visible about two miles astern. It was eleven o'clock, a bright moonlight night, and the sea was calm. The second shot fell short of the schooner by about a fathom, and while the boat was being launched a third shot came aboard, and exploded over the main hatch, killing one of the seamen, and carrying away the foresail. The skipper and the two remaining seamen got into the boat just as a fourth shot struck the vessel amidships. They pulled away in a northerly direction, and saw the submarine come up to about 200 yards from the vessel and fire seven more shells into her from close quarters. Within half an hour she had sunk, and as the wind got up when they had pulled the boat some ten to fifteen miles, the survivors put out their sea-anchor, and lay to till morning. Eventually they reached Alderney, but not before they had seen a submarine, presumably the same one, making for a ketch on the horizon, and heard it open fire.

Although the number of British merchant vessels captured or sunk by submarine during the month of March was well over a hundred, it is not to be thought that submarine attacks were invariably successful. During that same month there are records of no less than seventy-seven encounters between merchant ships and submarines, in which for various reasons the submarine commanders failed to achieve their murderous intent.

Among the vessels which were actually torpedoed, but escaped sinking, albeit with some loss of life, were the two hospital ships *Asturias* and *Gloucester Castle*. On the night of March 20th-21st the *Asturias* (12,002 tons) was torpedoed without warning at night, although she was brilliantly lit with her Red Cross lamps. Thirty-five lives were lost, but the ship was subsequently beached. On the 30th of the same month the *Gloucester Castle* (7,999 tons) underwent the same experience. In her case only three lives were lost, but the rescue of the wounded proved extremely difficult, and the attack was a very brutal aggravation of their sufferings.¹

¹ For details of the attacks on these hospital ships, see pages 316-18.

Two notable encounters in this month between merchant ships and submarines in which the attacker was definitely worsted, were those of the *Aracataca* (4,154 tons) and the *Crown of Granada* (2,746 tons). On March 10th the *Aracataca*, on her way to Liverpool from Costa Rica, was nearing the Irish coast, when at 1 p.m. an enemy submarine opened fire upon her from astern. The master (Mr. John H. Scuddamore) had carefully rehearsed his officers and crew for such an encounter, and returned the fire with his 12-pounder, firing altogether forty rounds in reply to thirty-five from the submarine. Three times the ship was hit, the second shot from the submarine passing through the firemen's quarters, killing one man and injuring four others. Another shell struck the bridge, between the master and the second officer, injuring the latter; and the third passed through the funnel, and wrecked the galley. The master successfully dodged the remainder of the shots by his coolness and skilful navigation, noting the position of each splash, and zigzagging accordingly. He was well seconded by everyone on board, and in his report of the encounter he gave special praise to the chief steward for his first aid to the wounded, and to the two gunners, one of whom was the ship's carpenter, for their effective handling of the gun from a particularly exposed position. Some three-quarters of an hour after the attack commenced, a British war vessel arrived to give assistance, but already the submarine's gun had been silenced for some minutes, and the *Aracataca* had registered at least one hit. The merchant ship had outmanœuvred and out-fought the submarine before help came to her.

The *Crown of Granada* was an outward-bound ship from London to Barbados, and on March 23rd, not far from the scene of the *Aracataca's* fight, she sighted an enemy submarine on the surface, about four miles ahead of her. The master (Mr. A. D. Falconer) put his ship about, to bring the submarine astern, and opened fire. This was at 7.50 a.m., and a running fight was maintained for an hour and a quarter. The German gun outranged the ship's 12-pounder, and the submarine avoided coming up too close. At first her shots fell right ahead, but gradually she reduced her range, and the ship escaped them by repeated alterations of her course. The sub-

marine fired forty-six rounds, and hit the ship once, in the after-hold, four feet below the waterline. The hole was not a large one, and was very promptly patched. Meanwhile the ship's gunners steadily plugged away, firing no less than seventy rounds ; and though they never quite reached the submarine, the shots fell near enough to worry her, and to confuse the aim of her gunlayers. Shortly after 9 a.m., having had enough of it, she submerged, and gave up the contest.

The month of April 1917 was the most disastrous to British merchant shipping in the war. No fewer than 997 lives were lost, and ships to the extent of 516,894 gross tonnage were destroyed or captured, by enemy submarines alone. The torpedo attacks were in nearly every case without warning, and while the submarine commander frequently approached the survivors struggling in the water or tossing in small boats, it was only for the purpose of securing the master of the sunken vessel as a prisoner, with sometimes the chief engineer or one of the officers. During this month the total losses, including Allied and neutral shipping, due to enemy action reached the enormous sum of 881,027 tons.

The Germans now utterly disregarded the rules and obligations of maritime warfare previously observed by civilised nations. Throughout the Napoleonic wars it had been a point of honour to rescue from drowning those seamen whose ships had been taken or destroyed. At Trafalgar, British sailors, at imminent risk of their own lives, saved the crews of enemy warships on the point of being blown up or sunk. It was reserved for the twentieth century to witness in the German submarine campaign the deliberate jettisoning of all such obligations hitherto considered sacred, and the casting to the winds of the most elementary dictates of humanity.

On April 8th, 1917, the *Torrington* (5,597 tons), proceeding from Gibraltar to Cardiff, was torpedoed without warning about 150 miles south-west of the Scilly Isles. The master (Mr. A. Starkey) saw that it was impossible to save the ship, and ordered the crew, consisting of thirty-four men, into the two lifeboats. He deposed in evidence later that he and the twenty men in his lifeboat were commanded to go on board the submarine, and that he was taken below and kept a prisoner, while his men were left on deck.

The submarine then submerged for twenty minutes, the men on deck being all washed off and drowned. Meanwhile his lifeboat had been manned by four of the German sailors and one officer, who all returned on board the submarine when she rose again to the surface. They brought with them provisions which had been in the mate's boat, as well as those from his. "I am positive," he said in his deposition, "of the provisions being from both boats, as I had different brands of meat, also one boat contained rum and the other brandy, portions of which I saw myself in the submarine afterwards." Although the sea was quite calm all that day, the mate's lifeboat was never heard of again, and none of those on board it were picked up.

Captain Starkey was landed at Heligoland, and imprisoned there till December 1918, but while he was still on board the submarine she sank two other British ships, one of which, the *Toro* (3,066 tons), went down on April 12th. In both cases the master was made prisoner, and both times the submarine submerged for about twenty minutes, immediately after the prisoner had been brought below. In the case of his own ship, the *Torrington*, Captain Starkey said, "I never heard of any reason why the submarine should have dived. There was no ship in sight, and no alarm was given. Some of her own men and one officer were absent from the submarine when she dived, and we remained in the vicinity for the rest of the day on the surface. I was kept amidships away from the other prisoners for about two hours, and then sent forward with the two that were already there." These two were Captain Draper of the *Umvoti* (2,616 tons) and Captain Ashfield of the *Petridge* (1,712 tons), both of which had been sunk earlier on the same morning as the *Torrington*.

That the deliberate murder of entire crews by depriving them of lifebelts, and leaving them to be washed off the deck of a submarine when she submerged, was no isolated case of inhumanity, was amply proved in July of the same year when the *Belgian Prince* was sunk, and three of the intended victims managed to secrete cork jackets underneath their greatcoats, and survived to tell of their experience. This incident is described in a later chapter.

Of 169 British merchant vessels sunk during April, three were destroyed by torpedo on the first day of the month. These were the *Warren* (3,709 tons), the

Kasenga (4,652 tons), and the *Zambesi* (3,759 tons). On April 2nd only one ship was sunk, the *Britannia* (3,129 tons), and the early morning of that day was memorable for the successful resistance and escape of the *Wandby* (3,981 tons), attacked in the Bay of Biscay. She was on voyage from Bilbao to Newport, and was making for La Rochelle, when about 6 a.m. a shot from a submarine fell close astern of her. The sea was very rough, and it was not till after the sixth shot that the enemy was sighted. The submarine was one of the latest type, using two 4-inch guns. The *Wandby's* master (Mr. D. Simpson) at once brought her dead astern, and opened fire in reply. At the end of three-quarters of an hour the *Wandby's* fifteenth shot brought the encounter to an end, and the submarine disappeared below the surface. She had fired thirty-six rounds, and had hit the *Wandby* once, on the port quarter just above the waterline, and some damage had also been done by bursting shrapnel, but happily no British lives were lost. The master's own account of the affair is interesting:

"We got well away from port with the convoy, but had an accident to our wheel-chains, and were left behind. We repaired our damage, and on Monday morning the Germans came along, and started shelling our old ship, which only gets eight knots. There was no chance of running away, and it was either a case of throwing up the sponge or fighting, and we pegged away at him. The fifteenth got home, and the last we saw of him was his bows up in the air, and he went down stern first."

By the end of the first week in April twenty-three vessels had been sunk, the two largest being the *City of Paris* (9,239 tons) and the *Canadian* (9,309 tons) on the 4th and 5th respectively. By the torpedoing of the *City of Paris* 122 lives were lost. On the same two days the *Dundrennan* (4,248 tons) and the *Kangaroo* (4,348 tons) were both attacked by submarines upon the surface, and returned the fire with such success that they escaped without serious damage.

At 7.30 a.m. on the 4th, the master (Mr. J. Cruddace), of the *Dundrennan*, observed a submarine about 8,000 yards distant approaching the vessel at full speed. She was at once brought astern. The shots from the submarine fell

very close at first, but when the steamer opened fire they became considerably more erratic. After each shot from the submarine the *Dundrennan* slightly changed her course. The ship fired thirteen rounds, and the submarine about thirty. At 8.15 the enemy ceased fire and disappeared.

The *Kangaroo* was a motor-ship belonging to the Government of Western Australia. She was attacked by gun-fire about 6 a.m. in the Mediterranean on April 5th. The master (Mr. H. C. Norris) vigorously returned the fire, and in addition used smoke boxes with good effect. The port smoke box was used first, but the wind caused the smoke to blind the gunners and the look-out on the bridge, so it was extinguished, and the starboard one started instead. About 6.30 a.m. an enemy shell struck the vessel, causing some minor damage, but wounding nobody. The submarine, which was about five miles distant when first sighted, continued to gain steadily on the *Kangaroo*, but was careful not to expose its whole length to her fire. By zigzagging slightly, and hauling his ship to westward about a quarter to half a point more each time, the master successfully misled the gunners of the submarine. The *Kangaroo* fired thirty-six rounds, and one of her shells was thought to have hit the submarine, which gave up the encounter and submerged at 7.20 a.m.

On April 8th, the day on which the *Torrington* was sunk and her crew murdered, the R.M.S.P. *Carmarthen-shire* (7,823 tons) was nearing the entrance to the English Channel, when at 5.20 a.m. the officer of the watch sighted a submarine about three miles distant. The following extracts are taken from the report of the encounter by the master (Mr. E. C. Wakeman):

“I was on the bridge instantly, and steadied the ship when her stern was in line. Telephoned the ship’s position (which was kept ready in a book for every half-hour) to the wireless operator. Rang the pre-arranged signal to the engine-room on the telegraph, then called all hands, sending the chief officer round the ship to see that everybody was out with lifebelts on, and that those who could be were stationed by their respective boats, but under cover. After reporting this to me, he went aft, and got the ammunition up, returning to the bridge when the

whole of it was ready for use. The engineers all went below, and got the utmost speed out of the ship, opening up the engines to their limit, the steam roaring up the escapes. . . . The submarine opened fire on me without warning, certainly within one minute of the time of sighting her, firing three rounds, the shells striking the water just clear of my quarter. I then ran the ensign up aft, and the largest ensign I had on the jumper stay amidships, and opened fire on her, our shells falling close to her. At that she dropped further astern, and opened fire again, making three distinct attacks and firing about fifty rounds in all, the last four rounds being shrapnel. . . . Not being able to reach her I ceased firing after twenty rounds, she attacking all the time, and Mr. Penny, the refrigerating engineer (being the only engineer on deck), assisted by the gun's crew, removed a stop out of the elevating arc of the gun, which enabled me to increase the range to 9,900 yards against 6,600 before. I then opened fire again, using another eighteen rounds, making thirty-eight rounds in all. At 7.30 the submarine turned beam on to me, and dived." After giving other details he adds, "I had given the gun's crew orders that when we were reduced to four rounds they were not to fire any more, no matter how we were hit, in the hope that the submarine would close; then they were to let her have the four in the hope of getting her, and finally escaping."

This order is particularly interesting, and is evidence of the determined spirit in which the attack was resisted.

In the second week of April twenty-eight ships were sunk, and in the third week fifty-eight. On the 13th the *Argyll* (3,547 tons) was torpedoed about 100 miles west of the Scilly Islands. Eleven of the crew managed to launch a boat and save themselves, but twenty-two were drowned. On the same day the *Zara* (1,331 tons) was carrying a crew of twenty-eight and twenty-eight passengers, when she was struck on the port side by a torpedo. A terrible explosion occurred, and the ship began to sink very rapidly. The starboard lifeboat was lowered, but the vessel went down before the port boat was got clear. Twelve of the crew and seventeen passengers were saved, but twenty-seven lives were sacrificed.

About five o'clock on the same afternoon the *Kariba*

(3,697 tons) was torpedoed 230 miles south-west of the Scillies, her starboard lifeboat being smashed by the explosion. Her bunker hatches were blown up, and the stokehold immediately filled with water, so that she went down in a few minutes. Her crew took to the two remaining lifeboats, which kept together for about two hours, and then lost sight of each other. The port lifeboat contained twenty-one men, with very little food. Eleven died from exposure, and two others died afterwards in hospital. The survivors were picked up on the 22nd by the French trawler *Esperanza*, and taken to St. Louis, after nine days in the open boat.

The *Lime Branch* (5,379 tons) was also torpedoed on that day, but succeeded in reaching Plymouth under her own steam. She was struck in No. 2 hold, and settled down by the head until the fore end of the harbour deck was awash. The other two holds being found sound, the engines were restarted, and she proceeded slowly. An escort was signalled for, and a destroyer met her at 7.30 p.m. At 7.50 she was again attacked, but owing to her slower speed the second torpedo passed about a foot in front of her.

A somewhat similar escape was effected by the *Branksome Hall* (4,262 tons), which was attacked on the 11th. It was a very dark night, with a high sea running, when the torpedo struck her. She took a list of 30° to port, and her boiler-room, engine-room, and No. 4 hold became full of water. The boats were launched with great difficulty, and about 4 a.m. the crew were picked up by a French torpedo boat, and placed on board the guard-ship in Cherbourg harbour. Finding next day that the ship was still afloat, the master (Mr. H. G. Jenkins) and sixteen of the crew managed to get a tug to take them back to her. They found twenty-four feet of water in the engine-room and No. 4 hold, but none in holds No. 1 or No. 5. The help of a second tug was obtained, and the ship was anchored off the harbour for the night. On the following day she was brought safely in.

In all these instances and many others, utter indifference was shown by the German submarine commanders as to the fate of those on board the ships they sank. On the 15th occurred an instance of still worse barbarity. At 11.45 p.m. the *Cairndhu* (4,019 tons) was about twenty-

five miles from Beachy Head, when she was struck by a torpedo on the port side amidships, and took a heavy list to port. Both lifeboats were successfully launched and stood by the ship, which was sinking rapidly. Shortly afterwards a submarine appeared and deliberately rammed the port lifeboat, many of whose occupants were thrown into the water. Fortunately, though awash and with the seas breaking over her, she was kept afloat by her watertight tanks. The survivors were picked up by a passing steamer, but not before twelve men had been drowned or succumbed to cold and exposure. The other lifeboat with the master and six men succeeded in reaching port in safety.

Two days later the ambulance transports *Lanfranc* (6,287 tons) and *Donegal* (1,885 tons), when on passage from Havre to Southampton, were torpedoed without warning between 7 p.m. and 8 p.m. Ambulance transports were vessels fitted to carry invalids and wounded, but, though painted a distinctive grey, they ran as ordinary troop transports and, as distinct from hospital ships, could claim no immunity from attack. They were exposed to the same risks from unrestricted submarine warfare as were the ordinary merchant vessels.

The *Lanfranc* (master, Mr. W. E. Pontet) was carrying 234 wounded British officers and men and 167 wounded German prisoners in addition to the medical personnel and crew. She was escorted by the destroyer *BADGER*, and the P. 37. When about half-way across the channel, a terrible explosion took place on the port side abreast of the bulkhead between the engine-room and No. 3 hold. The engines were immediately stopped. The ship listed to port, settled rapidly by the stern, and then slowly came again into an upright position. Three of her boats were smashed by the explosion, and the Marconi installation was rendered useless. Both escorts were within about a mile of her at the time, one on either bow, and while P. 37 closed the *Lanfranc*, the *BADGER* searched for the submarine. As the *Lanfranc* was at the time of the explosion steaming 14 knots, it would have been dangerous to lower her boats at once. As soon, however, as she had lost sufficient way, one boat at a time was lowered on each side, eight boats getting away safely. Unfortunately, one boat on the starboard side

sank stern first, and nearly all the occupants were thrown into the sea, but were picked up later by lifeboats from the *BADGER* or sailing trawlers. Both escorts had by this time come alongside, and at very great risk, owing to the condition of the *Lanfranc* and the high seas running, had been embarking the wounded passengers, both British and German.

The behaviour of the latter was in many cases deplorable. Numbers of them rushed the boats or jumped on board the escorts.

In contrast to this behaviour of the Germans, we have another story told by a British officer on board :

“ The behaviour of our own lads I shall never forget. Crippled as many of them were, they tried to stand at attention while the more serious cases were being looked after, and those who could lend a hand scurried below to help in saving friend or enemy. I have never seen so many individual illustrations of genuine chivalry and comradeship. One man I saw had had a leg severed and his head was heavily bandaged. He was lifting himself up a staircase by the hands, and was just as keen on summoning help for Fritz as on saving himself. He whistled to a mate to come and aid a German who was unable to move owing to internal injuries. Another Tommy limped painfully along with a German officer on his arm and helped the latter to a boat. It is impossible to give adequate praise to the crew and staff. They were all heroes. They remained at their posts until the last of the wounded had been taken off, and some of them took off articles of their clothing and threw them into the life-boats for the benefit of those who were in need of warm covering. The same spirit manifested itself as we moved away from the scene of the outrage.”

Four British, fifteen German wounded, and five members of the crew were drowned.

The *Donegal* (master, Mr. John Jackson) had reached a point about nineteen miles south of the Dean light-vessel when she met her fate. She was escorted by two destroyers (*LIFFEY* and *JACKAL*) and had on board 639 wounded British soldiers, of whom 33 were stretcher cases. At 7.43 p.m. the chief officer drew the master's attention to the track of a torpedo four hundred yards distant on

the port side, just astern of the escort. Captain Jackson immediately ordered the helm to be put hard a starboard, but the vessel was, nevertheless, struck near her port propeller, the whole of her stern, with a newly mounted 13-pounder gun, being practically blown away and the gunner killed. Luckily the weather was fine and clear, and all the boats were safely got away, with the exception of two which were broken when the escort JACKAL was laying herself alongside. The other escort, LIFFEY, was meanwhile circling about in search of the submarine, but when the JACKAL had taken on board 500 of the wounded, she in turn laid herself alongside the *Donegal*, and took off the remainder.

The ship sank at about half-past eight. A few hands were thrown into the water, but most of them were picked up by the boats. The behaviour of the whole ship's company and the troops was uniformly excellent. There was not a trace of panic, and all orders were promptly carried out. It was largely owing to this fact that the casualties were so comparatively few. About twenty-six of the wounded soldiers were drowned, while the casualties to the crew amounted to eleven lost and five injured.

An interesting record among those of the injured was that of John Priest, one of the firemen, aged twenty-nine, who had had four of the vessels in which he had been employed sunk under him, and three damaged. He had been on board the *Titanic* when that liner was lost on her maiden voyage. He was in the *Olympic* at the time of her collision with the cruiser HAWKE. He had been wounded in the fight between the *Alcantara* and the German raider *Greif*. He had been in the *Britannic* when she was sunk. And, lastly, he had suffered injuries to his head as the result of the explosion in the *Donegal*.

On the day the *Lanfranc* and *Donegal* were sunk, the *Aburi* (3,730 tons) was on her way from Liverpool with a general cargo and 700 tons of coal for West Africa. At 7.15 a.m. she was about 150 miles off the north of Ireland, when a periscope was sighted by the second officer, some two hundred yards from the ship. Almost immediately, he saw a disturbance caused by the discharge of a torpedo. This struck the vessel at the after part of the bridge, piercing No. 2 hold and the engine-room. The master (Mr. W. Heaton) gave orders

to abandon ship, and threw the codes and confidential papers over the side. While he was doing this a shell whistled overhead, and the submarine appeared on the surface about a quarter of a mile away. One lifeboat had been wrecked by the explosion, and two other boats were swamped. Eventually two boats were got away, the master, chief officer, and gunner, swimming to the last one after searching the ship to make sure that all were clear. The submarine continued firing, and when the boats were rather more than a mile astern they saw the ship sink by the head and the submarine submerge almost simultaneously. The boats after a while got separated, but both succeeded in keeping afloat, in spite of very bad weather conditions, until they were picked up two and a half days later by a trawler and a coaster. By that time three men in the master's boat and thirteen in that of the chief officer had died from exposure.

The sailing and management of these small boats for long distances in heavy seas was a notable feature of many of these instances. On the 18th the *Castillian* (1,928 tons) was two days out from Liverpool, bound for Genoa with a full general cargo and one passenger, when she was struck by a torpedo about 1 p.m. and sank within four minutes. One boat was carried down with the ship, and came to the surface bottom upwards, the other was lowered safely with the chief officer and four men on board. The rest of the crew were thrown into the water, and seventeen of them, including the master, were picked up one by one, ten others being drowned. The survivors set sail for the Irish coast, and covered no less than 173 miles before they were rescued by the *Manchester Corporation*, and taken by her into Lough Foyle. All suffered very greatly from the exposure.

April 19th was a day of many disasters, thirteen vessels being sunk. The callousness which marked the German submarine campaign was particularly exemplified in the case of the *Caithness* (3,500 tons), which was torpedoed about noon that day. She was in the Atlantic, 130 miles from the north-west coast of Spain, and sank within a few minutes of being struck, the crew being all thrown into the water. The submarine came up among the survivors, and questioned them about the ship while they were still struggling in



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BRITISH MERCHANT SHIP TORPEDOED.

the water, trying to keep themselves afloat; when she had got her information, she just left them where they were, to drown. Eleven of them succeeded in righting a boat which had been overturned; and seven days afterwards two men were picked up in this boat alive. These two were the only survivors out of the *Caithness's* crew of forty-nine.

The next day, the 20th, the *Portloe* (3,187 tons) was struck by a torpedo amidships, and foundered at once. The third engineer and the mess-room steward managed to cling to some wreckage for a couple of hours, when they were rescued; but their twenty-four shipmates were all drowned.

Very early that same morning the *San Hilario* (10,157 tons), with a cargo of oil fuel from Puerto Mexico, was making for Queenstown, when she was attacked by gun-fire about 250 miles west of the Fastnet. She was steaming $10\frac{1}{2}$ knots, but was immediately put to full speed, and eventually made $12\frac{1}{2}$ knots. The submarine was about five miles away when she first opened fire, but rapidly overhauled the steamer, and after seventy rounds made her first hit at the base of the funnel, damaging the steam pipes. The gun's crew at this point wanted to abandon the gun, but the chief officer, Mr. Clark, helped by the senior apprentice, kept them to their post. The *San Hilario* was hit twelve times, and continued to return the fire until there were only five rounds left. The master (Mr. F. Cole) gave orders then to abandon ship, and the crew got safely away, and were in the boats for four days, when they were picked up. The master himself was taken prisoner, and the ship was sunk.

Occasionally the peril of a torpedo was successfully averted by the vigilance of those on watch. The *Leasowe Castle* (9,737 tons) was in the Mediterranean on this day, when the third officer observed the wake of a torpedo approaching from the port quarter; he immediately informed the master (Mr. J. N. Culverwell), who was on the other side of the bridge, and it was just possible for the helm to be put over in time to lessen the damage. The torpedo struck the stern, destroying the rudder and the rudder post, and causing the gun to be dismounted. The periscope of the submarine was sighted about 1,500 yards away, and a second torpedo was fired, which passed

ten yards astern. The ship managed to reach Gibraltar under her own steam. In this case the third officer's vigilance averted a much worse disaster, and practically saved the ship.

The loss of life during the next three days was happily not so great, and on the 21st the *Roumanian Prince* (4,147 tons) had a well-deserved escape, due partly to the master (Mr. H. A. Camp) and partly to the wireless operator. A vessel with two sails set was sighted on the port bow, and the master suspected her to be a submarine. As soon as he altered his helm to bring the suspicious craft astern, the latter dropped her forward sail, and fired, the shot falling about two hundred yards short of the vessel. The second shot fell a hundred and fifty yards ahead, and a third burst over the bridge, destroying the aerial, and splintering the decks. The *Roumanian Prince* was armed with a 12-pounder, but did not fire, as the submarine was out of range, and the master wished to keep its commander in doubt as to what armament the steamer carried. By the time the submarine had fired fifteen shots, the wireless operator had repaired the apparatus, and a message was sent out, a reply being received almost immediately. The submarine then abandoned the chase, and half an hour later an escort arrived.

On the following day the *Karoo* (6,127 tons) successfully maintained a running fight for about three hours with a submarine by gunfire, after being narrowly missed by two torpedoes. She was on voyage from Halifax, Nova Scotia, to Devonport, and some distance west of the Scilly Isles, when at 11.50 a.m. the track of a torpedo was seen just abaft her port beam. Almost immediately afterwards a second torpedo was seen approaching, and as the ship was now swinging rapidly on her helm, this also missed her by about thirty feet. The submarine then came to the surface, and opened fire with her two guns at a range of about 8,000 yards. The *Karoo* was frequently struck, and fired thirty-five rounds, while the submarine fired nearly two hundred. Towards three o'clock two torpedo-boat destroyers made their appearance in answer to the *Karoo's* S.O.S., and the submarine submerged.

The remainder of the month was marked by a disastrous tale of losses, eight merchant vessels being sunk on the

24th, nine on the 25th, and many more on the succeeding days. The greatest loss of life was on the 24th, when the *Abosso* (7,782 tons) was torpedoed without warning off the south coast of Ireland. She was carrying 127 passengers and a crew of 133, and 65 of those on board were drowned. Other sinkings on that day included the *Barnton* (1,858 tons), which was torpedoed with a loss of 14 lives, and the *Ferndene* (3,770 tons), which lost her master and eight members of her crew.

On the same day also the *Thirlby* (2,009 tons) narrowly escaped disaster in the Atlantic. No fewer than three torpedoes were discharged at her, and she was afterwards attacked by gunfire. At 7.30 a.m. the first torpedo was seen to pass across her bow, though nothing was visible of the submarine from which it came. At 8.10 a.m. a second torpedo was observed approaching, and the master (Mr. T. W. Hill) altered the vessel's course, so that it passed astern. Soon afterwards a third torpedo was avoided in the same way; and four minutes later the submarine appeared right astern. The *Thirlby* opened fire, and the submarine dived, and appeared again about three miles distant, whence she started firing from both her guns. The *Thirlby's* shots, however, fell so close, that the submarine dropped further back, and kept for a while out of the ship's range. After she had scored a hit with one of her shells on the ship's deck she came up closer, but a second time was forced by the excellence of the ship's gunnery to drop back to a respectful distance. About noon another vessel approached, which was fitted with wireless apparatus, and sent out a message for assistance. This was answered by a destroyer, which came up about 2 p.m. After hearing particulars she went in search of the submarine, which had disappeared. During the attack the submarine had fired over 150 rounds, and the *Thirlby* 57.

The largest vessel sunk about this time was the *Ballarat* (11,120 tons), which was torpedoed on the 25th about 30 miles from the Land's End, happily without loss of life. She was a P. and O. boat, and was on a voyage from Australia to Great Britain with Australian troops. It was 2 p.m. when the torpedo struck her, causing a terrific explosion, which carried away one of her propellers and bent the shaft of the other, destroyed the main steam pipe of the engines, and put out of action the 6-inch

gun and the wireless apparatus. The signal for troops and crew to go to their boat stations was sounded immediately, and within a few minutes more than twenty boats had left the ship, and were picked up by destroyers which came to the rescue. An attempt was made to tow the *Ballarat* to safety, but she sank at 4.30 p.m. $7\frac{1}{2}$ miles from the Lizard light. The splendid discipline of both troops and crew made it possible to land the ship's entire complement, 1,752 souls, without any casualties. The master (Mr. G. W. Cockman), and some of the officers, left the ship only a few minutes before she sank.

A much larger vessel than the *Ballarat*, the White Star liner *Baltic* (23,876 tons), was attacked both on the 25th and 26th, and was saved both times by the vigilance of the look-out, and by the instant action of the master (Mr. W. Finch) in ordering the helm over. Captain Finch had been in command of the *Arabic*, when she was sunk in August 1915, and not only held strong views on the efficacy of "zigzagging on short legs," but made it his practice to supplement the ordinary look-out by having the whole of the deck watch on look-out duty while his ship was in the danger zone. He himself remained on the bridge practically the whole time, and this meant that, from the time when the submarines began to operate well out in the Atlantic, he was on continuous duty for four days, both coming in and going out from Liverpool. The first attack on the *Baltic* took place in fine weather, a suspicious patch being sighted on the port bow. Immediately the ship was swung to port, in hope of passing over the submarine, and a torpedo went by within a few feet of her. On the occasion of the second attack the first intimation of danger was the appearance of the air bubbles rising on the firing of the torpedo. Again the instant action of the helm saved the vessel, and the torpedo missed by about twenty feet. The *Baltic* had nearly 400 souls on board, including six men of the Danish schooner *Eos*, whom she had picked up from a small boat the day before; she was also carrying a cargo of 20,000 tons. The proverbial affection of a merchant captain for his ship and pride in her good qualities were well illustrated by the report of an official interview with Captain Finch in Liverpool. Reference was made to the tremendous strain which his four days' periods of constant

duty had imposed, but he dismissed the subject with a joke about his seventeen stone being a strain upon his legs, and the exclamation, "But you should have seen her answer her helm; she is a beauty."

A few of the vessels that were sunk in the last week of April were the *Swanmore* (6,373 tons) on the 25th, with a loss of eleven lives; the *Harflete* (4,814 tons), with a loss of one, on the 26th; the *Beemah* (4,750 tons) and the *Glencluny* (4,812 tons) on the 27th; the *José de Larrinaga* (5,017 tons), the *Port Jackson* (2,309 tons), and the *Terence* (4,309 tons) on the 28th; the *Karonga* (4,665 tons) and the *Daleby* (3,628 tons) on the 29th; and the *Delamere* (1,525 tons) and the *Gretaston* (3,395 tons) on the 30th. In all these cases one or more lives were lost; in the case of the *Gretaston* there were no survivors.

The *Harflete* (master, Mr. Scott Carpenter) was attacked at 11.30 a.m. and avoided two torpedoes. The submarine then came to the surface, and a running fight ensued with gunfire. The 22nd and 23rd shots from the *Harflete* seemed to strike the submarine, which ceased firing, and gave up the chase. At 9.45 p.m. on the same day the *Harflete* was suddenly torpedoed, and soon afterwards sank. The crew were picked up next morning, and taken in to Queenstown.

The sinking of the *Karonga*, with a loss of eighteen lives, in the Strait of Messina, was notable for an act on the part of the chief steward for which he was awarded the Albert gold medal. When the ship was torpedoed, two of the deck plates buckled, and caught the legs of a Lascar between them so firmly that he would have been inevitably dragged down with the rapidly sinking vessel. Mr. A. W. Furneaux, the chief steward, saw him, and at great risk to his own life extricated one of the man's legs, and finding it impossible to set the other free, amputated it with an ordinary clasp-knife, and carried the man to a boat. In the boat he dressed the wound as well as possible, and gave the man his lifebelt.

On the afternoon of the 29th the *Daleby* (3,628 tons) was about 150 miles south-east of Cape Clear, when she was torpedoed without warning. She was struck twice, the second torpedo blowing up all the lifeboats and causing her to sink immediately. The last man to leave the ship dived off as she was sinking. The submarine then came

to the surface, and circled round him, but no attempt was made to pick him up. Afterwards he noticed the ship's dinghy floating a little way off, and swam towards it. The wind, however, was behind him, and kept blowing the boat away, so that he did not reach her for two hours. Having baled her out, he returned to the scene of the disaster, where he managed to pick up a fireman, who had been wounded in the head, and was unconscious. He revived this man, and together they started rowing for land, though the fireman was not able to do much work. After twenty-four hours they were rescued by a steamer, but twenty-six of those who had been on board the *Daleby* perished.

In the sinking of the *Terence* (4,309 tons), which occurred on the previous day, three submarines took part, and her master (Mr. W. Frodsham) received afterwards the D.S.C. for the determined effort which he made to save his ship from destruction. The *Terence* was bound from Buenos Aires to Liverpool, and the series of encounters opened when she was about 200 miles from the Irish coast. At 1.20 p.m. the first submarine was sighted, and seventeen rounds were fired at her without effect; she then disappeared in the haze. At 4.55 p.m. the wake of a torpedo was seen approaching the ship, and, the helm being put over quickly, the torpedo passed astern. Shortly afterwards the submarine came to the surface, and for the next two hours an artillery duel went on between it and the merchantman. About 7 p.m. the submarine was firing shrapnel, which kept bursting over the ship, and as the *Terence* had fired seventy-four rounds and had only sixteen left, Captain Frodsham ordered these to be reserved, and the gunners to cease firing and take shelter. Ten minutes later a second submarine appeared, and each of them discharged a torpedo ineffectually at the *Terence*. They continued shelling her till 8.15 p.m., when they ceased firing owing to the darkness. The master believed they were still following, and took counsel with his engineers as to the possibility of lessening the amount of smoke from the funnel. At 11.15 p.m. the ship was struck by a torpedo, and after the long shelling to which they had been subjected the crew had somewhat lost their nerve, and all hands rushed to their stations, so that the boats were lowered and got away in a few minutes. The second

officer, finding that the master and chief officer were still on board, brought his boat back, and with some difficulty persuaded them to leave the ship. So resolved was the master not to be taken prisoner to Germany, that he intended, if a submarine should capture him, to jump overboard and, if possible, carry a German officer down with him. The boats, however, after sixty-one hours, reached Ireland safely.

CHAPTER II

THE THIRD WINTER OF PATROL WORK

THE German decision at the opening of 1917 to press an intensive submarine campaign threw greatly increased work on the Auxiliary Patrol. Could the officers and men stand the additional strain which had now to be met if the foundations on which the Allied war effort, by sea, by land, and in the air were to be preserved?

Every Allied ship found within the barred area was to be attacked without delay. "Our object," it was decreed from Berlin, "is to cut England off from traffic by sea, and not to achieve occasional results at far-distant points. As far as possible, therefore, stations must be taken up near the English coast, where routes converge and where divergence becomes impossible." All submarines, as a rule, were to proceed by way of the English Channel so as to shorten the cruise and thus lessen the period subsequently spent in dockyard hands. The bad weather experienced for long periods in the North Sea and Atlantic was severely testing the enemy's submarines, and they were directed to use the Straits of Dover, instead of the north-about route to reach their operating stations, and to attempt to pass through the British defensive system during the hours of darkness, preferably at a time when the tidal stream would assist them.

Everything consequently conspired to throw increased responsibility on the craft of all descriptions which had been pressed into the country's service at this "bottle neck" of ocean traffic, contiguous to the bases which the Germans had established on the Belgian coast. If only the Straits could have been closed with nets or mines, all might have been well, but the nets were proving unreliable under the pressure of high seas, and the supply of mines, particularly mines of the improved type, was, owing to the urgent demands for munitions of every kind required for the navy, the army, and

merchant shipping, inadequate for the serious situation which had developed. Moreover, it was not only in the Straits of Dover that the auxiliary craft had to respond to calls for service beyond anything hitherto known. The enemy was pursuing his activities in such widely separated areas as the western approach to the English Channel, the Mediterranean, off the south coast of Ireland, the North Sea, the whole length of the English Channel, the Irish Sea, and far out in the Atlantic.

What was to be done with the exiguous means then available? Defensive measures already found effective, such as the employment of armed patrol vessels and Q-ships, had to be perfected. New devices, such as hydrophones, and new tactics such as stalking and hunting the enemy rather than awaiting his coming had to be adopted. Specialist officers were detailed to the various Auxiliary Patrol bases to superintend the working of the hydrophones which were being hurriedly installed in small craft. A systematic method of training ratings in the art of listening by these instruments—an art that was not so simple as it seemed—had to be instituted. Hydrophones were at this period in an early stage of evolution, and it needed both a sensitive ear and much experience to distinguish between the various underwater sounds which they picked up and the sound of a submarine's engines.

The enemy's submarines regularly succeeded in negotiating the Dover Straits, a favourite place being between the buoys on the western side of the barrage of this date. Occasionally they would be caught in the nets, but oftener still they wriggled through. On the very first day of the unrestricted campaign, UC17 reported that she got caught between two of these buoys. She succeeded in extricating herself, but about forty yards of net remained hanging from her hull. By going astern with her engines, she managed to get clear of this unwelcome load. Such an incident in no way supports an indictment against our drifters and their crews; it is merely a proof that by this time a thoroughly reliable and effective method of thwarting the U-boat had not been evolved. At the best the use of nets is only a defensive measure. It had been difficult in the earlier stages of the war to find the right offensive tactics to be employed against the unseen foe.

The idea of using trawlers and M.L.s (motor launches) in formation for hunting flotillas promised well. The enemy often had reason to respect and fear the 9-knot trawler with its little gun and vigilant crew. Now, too, as revealed in the reports of submarine commanders, they were becoming nervous of the M.L.s. The next stage was to employ these trawlers and drifters and M.L.s on more scientific lines in accordance with ripening experience. The first units organised to hunt with hydrophones were the drifters in the *Ægean*, which began to operate in February 1917. Organised in divisions of seven, the leader being in the centre, all the vessels were moved according to the direction of the drifter or drifters which heard the sound of the U-boat. The idea was to keep the enemy within the area assigned to the division and eventually force him to come to the surface within gun-range of the drifters. This idea was afterwards adopted in Home Waters, and by June 1917 four hunting flotillas of six M.L.s each were formed and based on Newhaven, Portsmouth, Portland, and Dartmouth. As a result, many engagements during the next three months took place between these flotillas and submarines. The U-boat would first be located on the hydrophones by means of cross-bearings, and depth-charges would then be dropped. Even if he was not always destroyed, the experience certainly inflicted on the enemy a good deal of "moral damage" and tended gradually to wear him down until, as actually happened on some occasions, the submarine came to the surface glad to surrender.

Owing to the success of these flotillas others were formed during the spring of 1918 at Peterhead, Granton, the Tyne, the Humber, Great Yarmouth, Lowestoft, the Nore, Littlehampton, Torquay, Newlyn, Holyhead, and Larne, the senior M.L. officer's ship being fitted with wireless. Each M.L. was equipped with four depth-charges, a gun, a hydrophone, and a flashing lamp. As time went on, a better type of hydrophone was evolved, and these little grey ships were to be observed coming along in line abreast, as far apart as visibility and signalling would allow by day; at night or in thick weather, they drifted with engines stopped, listening eagerly to the hydrophone, the aim being invisibility and silence, so as to catch the enemy unawares, perhaps while in the act of charging his

batteries. Other hunting flotillas were started elsewhere, and more powerful depth-charges were introduced into the service.

Meanwhile the old but successful methods were being continued. The armed smacks out of Lowestoft and the decoy trawlers from certain Scottish ports were at work, some of the latter, disguised with deck houses, and with sweeps and davits removed, being sent out into the Atlantic as far as the Flannan Islands. The trawlers, in spite of their third winter on patrol, were giving the enemy little peace. On February 7th the trawlers *Swallow* and *Pigeon II* were patrolling off Whitby when they had an experience worthy of being put on record. About 10 a.m. Lieutenant J. Dixon, R.N.R., the *Swallow's* commanding officer, observed a steamer sinking, and proceeded at full speed, in company with the *Pigeon II*, to investigate. On getting closer, it was noticed that there was another steamer in the vicinity which was stopped with boat tackles over the side; several boats were rowing about. These two vessels turned out to be the *Corsican Prince* (2,776 tons) and the *St. Ninian* (3,026 tons), which had been torpedoed three miles east of Whitby. As the *Swallow* came up, two boats full of seamen were sighted, and there was obviously a periscope to the eastward of the *St. Ninian*. Shouting to the men to remain in the boats till picked up, Lieutenant Dixon proceeded at full speed for the periscope and rammed the submarine, close to the conning tower, with such impact that the *Swallow's* bow was knocked violently to starboard, the periscope passing down along the starboard side three feet away. The *Swallow* then turned, dropped a depth-charge, and buoyed the spot. A good deal of oil was observed coming to the surface. Meanwhile the *Pigeon* was picking up the three boat-loads of men and ultimately landed them at Whitby.

It was just at the moment when the *Swallow* rammed the enemy, that the latter was firing a torpedo at the *St. Ninian* only three hundred yards away. This took effect so that the steamer sank in a few seconds. One hour later the destroyers DOON and WAVENEY, who were seven miles off, intercepted a wireless message and proceeded at 20 knots to the scene and searched for the enemy. At noon the WAVENEY sighted a periscope cutting through the water in a southerly direction. The forecastle gun was

fired, one shell bursting near to the periscope. Later on, the periscope was again seen on a south-westerly course. The *WAVENEY* therefore rammed her at full speed, the bump being distinctly felt down the starboard side. About this time a third destroyer—the *NITH*—took in a signal and steered to cut the enemy off. At 1.15 p.m. she sighted the submarine slowly heading to the south-west, having just come to the surface. On sighting the *NITH*, she dived, but a depth-charge was dropped, and a large patch of oil afterwards appeared on the surface. The chase was maintained and three hours later the *Swallow* noticed a disturbance in the water, oil appearing near the dan buoy. But darkness was now setting in and the hunt had to be abandoned. This incident was an instance of the ease with which a submarine could evade patrol craft and deceive them. There is no reason for supposing that the U-boat was destroyed; on the contrary, it had become part of their artful routine to discharge a certain amount of oil into the water after attack, so as to deceive the hunters into the belief that the hull had been injured. It was some time before this ruse was realised, with the result that more than once a submarine was wrongly claimed as having been sunk, whereas the stalking and attack should have been continued. In the case which has been cited the co-operation of the trawlers and destroyers only just failed in their purpose. The submarine was evidently in difficulties, but the darkness came to her salvation. Lieutenant Dixon received an appreciation from the Board of Admiralty for the promptitude of his attack.

The captains of submarines in the meantime were carrying out orders to be ruthless towards fishing craft. The movements of the UC44 illustrate the campaign. This vessel, having crossed the North Sea, began operating off the north-east coast. On February 11th, the enemy sank the trawler *Ashwold* of Shields, taking the skipper prisoner. A course was then steered north and next day the trawler *Dale* was destroyed 42 miles S. by E. $\frac{1}{4}$ E. from North Ronaldshay (Orkneys). The vessel then came south and sank in succession the trawlers *King Alfred*, 75 miles south of Fair Isle, *Belvoir Castle* off Buchan Ness, and *Mary Bell* off Aberdeen. She then went back to her base, arriving at Heligoland on February 16th. In each case the victim was a steam trawler, and each of the skippers

was taken prisoner. On the day before she got home she was attacked by a couple of British destroyers, whose depth-charges at once destroyed the submarine's electric light fittings, plunging her into darkness. However, the German had recourse to the usual ruse of discharging oil; and chairs were placed in the after torpedo tube and came to the surface, so that the impression was created that the submarine had been blown up and had gone to the bottom.

In the monotony of these wintry days many a man serving in drifter, trawler, steam yacht, Q-ship, or motor launch must have been led to wonder whether, after all, he was doing as much for his country as the men in the muddy trenches of Flanders. He had patrolled thousands of miles, shot and hauled nets day after day, swept channel and estuary, but in most cases he had never so much as seen a submarine's periscope. Such doubts were groundless. The vessels of the Auxiliary Patrol were doing far more service by keeping the seas than they ever imagined. How often did the presence of the patrol craft cause the enemy to leave a steamship untouched! How often, when lying to those tiresome, kinking nets, did the drifters harass the U-boat and prevent the enemy from carrying out his orders to be "energetic" and "rapid" and to sink British shipping where traffic converged!

One such incident occurred at the southern end of the Irish Sea, where liners and other ships converged from the North Atlantic, the Bay of Biscay, the South Atlantic, and the English Channel, making for Liverpool, or proceeding on their devious ways when outward bound. Since the year 1916 the drifters based on Milford Haven, under the direction of Admiral Dare, had been working their nets across the sea from the Welsh coast right up to the Irish shore. Was all this work of any avail? We now know that it was, for UC65 at this important focal area was baffled. It was only with the greatest difficulty that she could get through the line of nets, and she reported on returning home that she had been surrounded by net-drifters. The whole of the area, she guessed quite correctly, from the Smalls to the Tuskar was barred by these little ships, and escape was only possible by submerging to the tremendous depth of 197 feet and going dead slow. The danger to the submarine's hull owing to pressure at that depth was not negligible. In their various ways, the fishermen, merchantmen,

and yachtsmen were taking their full share, in face of great hardship and no mean risks, in keeping the seas open for the Allies.

Valuable work was also being carried out by quite a different type of small craft. We have already seen how the necessity of rescue tugs increased owing to the activity of enemy submarines in their campaign against merchant shipping. During February 1917 the better organisation and distribution of these craft became the duty of a special committee at the Admiralty. It was a case of the supply being unequal to the demand. Tugs had to be attached to the Grand Fleet in order to be ready to take charge of vessels injured in a fleet engagement. Obviously such tugs must be available at short notice since it was impossible to foresee when they would be wanted. They could not be spared for any other purpose. Others, again, were needed for transport, for towing stores and ammunition across channel for our armies. Others were engaged, as they had been since the outbreak of war, in the examination service off the entrances of our harbours. The Merchant Navy also needed tugs, otherwise how were big liners to be brought alongside their landing stages and manœuvred in and out of docks?

But none the less the Admiralty required tugs for rescue work if injured merchant vessels were to be got into port, and they had to be hired. They were stationed all round the coast, the three principal stations being Buncrana and Queenstown, in Ireland, and Falmouth, in England. They were armed, provided with smoke-producing apparatus and depth-charges, and fitted with wireless. Many of their ratings were secured from the Trawler Reserve and some of these men did so well that in five months they were promoted to second mate, and then to mate. Such men had before the war been skippers of sailing smacks with no experience of steam, but owing to their practical knowledge of sea-lore they made excellent officers. It was no easy task to go out into the Atlantic in bad weather, find a sinking liner, get the tow rope connected up, and bring the vessel, possibly with a list to port or starboard or down foreward or aft, through the submarine zone safely into port. Such efforts demanded seamanship, daring, patience, and coolness of the first order. The rescue tug service paid for itself many times over in the value of the

ships and cargoes which were saved. For instance, during the last seven months of 1917 these craft saved 69 ships, which had been torpedoed or mined, and during 1918 the number of salvages was still higher. These vessels, it should be emphasised, were *hired* tugs, for though new tugs were laid down by the Admiralty in the autumn of 1917, the first of them was not completed until September 1918, and by the date of the armistice only five were ready. There were always fifty per cent. of such tugs at sea, and actually strengthening the patrols. As soon as the local senior naval officer received the news that a ship had been torpedoed or mined, he called up the nearest tug by wireless and she altered course and made for the ship's position.

It was not only to British or Allied ships that these tugs were rendering service. On February 22nd, eight Dutch ships which had put into Falmouth, came out, bound to the westward. These were the *Jacatra*, *Gaasterland*, *Noorderdijk*, *Bandoeng*, *Eemland*, *Ambon*, *Zaandijk* and *Menado*. They had been given a safe-conduct by the Germans. On the evening of that day a distress wireless call was picked up from the *Bandoeng*, whereupon three of the rescue tugs from Falmouth, as well as patrol vessels, were at once sent out. What had happened was soon explained. When about twenty-five miles west of the Bishop's Rock, Scillies, the ships were attacked by a German submarine, with the result that every one of the eight vessels was abandoned by her crew. Afterwards the tugs and patrol vessels came up. The distressed Dutchmen, to the number of about two hundred, were picked up and taken into Penzance and the Scillies. Six of the ships sank, but the *Ambon* and *Menado* were salved. The immediate result was that Dutch steamers sought refuge in Falmouth harbour, and during the week ending March 3rd there were as many as twenty-four of them lying at anchor up the Fal, causing great congestion and inconvenience. This attack, so unexpected and successful, had been carried out by Lieutenant-Commander Hersing of the U21, the submarine which had left Germany in April 1915, had reached Cattaro in May, and then had begun to operate in the Ægean and Mediterranean. The U21 was on her return voyage to Germany, when the Dutch convoy offered a most tempting target. She reached Wilhelms-

haven on March 3rd. It was stated later that Hersing was unaware of the fact that his country had granted a safe-conduct to the Dutch ships, and, after long negotiations, Germany agreed to compensate Holland by transferring to her, under certain conditions, six German steamers then lying in ports of the Dutch East Indies.

Meanwhile, in the Harwich area the minesweepers and patrol vessels were having a busy and anxious time; for the safety of the Harwich Force, under Sir Reginald Tyrwhitt, as it came in and out of harbour, depended largely on them. Submarines were operating in these waters very persistently, and therefore, in order to make the navigational conditions less easy for them, it was decided to shift one or two of the lightships.

Other measures taken at this time included the laying of boom defences in additional harbours so that merchant shipping might lie safely at anchor before putting to sea under cover of darkness. The trawlers which had laid and maintained the Yukanski boom in Lapland in 1916 were now thousands of miles away, preparing a boom off Sierra Leone, an illustration of the wide range which these little vessels covered in the performance of their war duties. Simultaneously the defensive equipment of merchant ships was being extended and improved.

Thus, so far as was possible with the human and material means at their disposal, the Admiralty were doing their best to combat the new developments of the submarine warfare. The situation was an embarrassing one. It was difficult to get material, inasmuch as private firms were already fully occupied in supplying the armies overseas. Nor was it easy to obtain an adequate supply of men for the Auxiliary Patrol, for they were required everywhere, both ashore and afloat.

As a result of the raid on the Dover Straits of October 26th, 1916, the Dover Patrol had been gradually strengthened by vessels detached from the Grand Fleet flotillas and by destroyers borrowed from the Harwich Force. As to the drifters whose duty it was to look after the barrage, these craft were withdrawn at night and their places taken by four or five destroyers who carried out a careful patrol. But the Ramsgate armed drifters and a torpedo boat still watched the northern approach to the Downs.

The night of February 25th, 1917, was fine though overcast, and the moon was obscured by clouds. The enemy took advantage of the conditions to make another raid on the Dover Straits, though it did not achieve very much. At 10.30 p.m. the destroyer LAVEROCK became engaged with enemy destroyers three and a half miles to the south-west of the barrage. Shortly afterwards the enemy altered course to the north and retired across the barrage. At 11.10 p.m. there was a second attack, much farther to the north; the Ramsgate armed drifters, who were spread on the line North Foreland-North Goodwin Lightship, being taken by surprise. The nearest inshore drifter of this squadron was the *John Lincoln*. She observed three destroyers half a mile to seaward, steering in a northerly direction along the coast. Immediately they opened fire, directing their guns towards the land; some shells fell in the vicinity of the North Foreland and others in and near Margate, in which town a woman and two children were killed. The *John Lincoln* fired a green rocket, which was the signal to indicate that an attack by surface craft was being made. Before response could be made to the signal, the enemy disappeared to the eastward.

During the month of March 3,586 tons of British fishing craft were destroyed. At this period fishing trawlers were being armed and despatched to their Iceland fisheries and elsewhere, keeping together for mutual support. The off-shore fishermen, such as those operating from Newlyn and St. Ives, were protected by armed drifters. How necessary this precaution was the events of March 11th and 12th revealed, for while fishing from ten to twenty-five miles off Trevose, Cornwall, eleven smacks were sunk by the enemy.

The strain of the intensified submarine warfare was telling severely on vessels of the Auxiliary Patrol. Senior officers all round the coast were complaining that with the demands for more escorts, more minesweeping, and more adequate protection of fishing craft, it was not possible to carry on an efficient patrol. The little ships were wanted everywhere and for all sorts of tasks. Then there was the sailor's eternal enemy to contend with—bad weather. In a gale of wind there are few places round the British coast less "healthy" for small craft than the Yorkshire coast with its dearth of suitable harbours. On March 4th, 1917, the

French tug *Robur* was coming along this coast with the three-masted schooner *Cognac* in tow. The *Robur* sprang a leak and was soon in such a sad plight that she had to cast off the tow, leaving the *Cognac* to anchor two miles off Scarborough, while she herself made off to the northward. The net drifter *Rodney II*, in command of Skipper James Dougal, R.N.R., fortunately came along, stood by the *Robur*, and escorted her to a position two miles east of Hartlepool where the *Robur* let go her anchor. The weather was very bad—an onshore gale of wind blowing. The conditions were such that the local lifeboat could not get out, and the destroyer QUAIL, which was proceeding north to render assistance to the distressed tug, was unable to get past Whitby and had to return. However, the gallant little *Rodney II*, her crew displaying splendid seamanship, succeeded in going alongside and taking off the *Robur's* crew.

Meanwhile the *Cognac*, anchored farther down the coast two miles off Scarborough, was in a miserable plight. Early on the morning of March 5th, the armed trawler *Dentaria* received a wireless signal ordering her to go to the assistance of the *Cognac*. Proceeding at full speed, Lieutenant Charles Wood, R.N.R., took the *Dentaria* crashing through the gale, and at 12.45 p.m. found the schooner with seas breaking over her and gradually dragging towards the beach. Off such a coast in such conditions of wind and sea, the chances of anything afloat surviving seemed small. The wind was south-east, force 7 to 8. After many attempts the *Dentaria* succeeded shortly after 2 p.m. in passing the *Cognac* a tow line by means of a rocket and a small line. The schooner now started to heave up her anchors, but her master reported that in so doing the windlass had become damaged beyond repair and that the vessel was leaking, with her pumps broken down. A quarter of an hour afterwards, owing to the heavy seas and the swell, the tow line which had been got aboard with such difficulty was carried away. Things were going from bad to worse and by the late afternoon, since wind and seas were increasing, Lieutenant Wood signalled to the *Cognac* asking whether, as it was useless to attempt again to take her in tow, the master wished to abandon ship. The *Cognac* signalled in the affirmative, and then there followed a fine example of sound seamanship.

Lieutenant Wood had been joined by the armed trawler *Viola* (Skipper Charles Allum, R.N.R.), whom he sent to steam ahead of the *Cognac* with oil bags out. This, of course, reduced the sea and enabled the *Dentaria* to approach the schooner and take off the crew. Only one man was washed overboard, but he was picked up. By five o'clock all were safe on board the *Dentaria*.

Seamen who know anything of the conditions which prevail at times off the Yorkshire coast will appreciate the difficulties which beset the *Dentaria*; the least error of judgment would have been disastrous. By the time the rescue had been completed in this comparatively shallow water near to the shore, it was blowing a fresh to strong gale with heavy seas and snow squalls. During the night both trawlers remained cruising near the schooner, hoping to be able to take her in tow as soon as the weather moderated. But with the dawn it was seen that the schooner was much deeper in the water; she looked a sorry sight as the gale swept the seas over her. All that afternoon, the trawlers remained standing by. As darkness fell, the weather, instead of improving, settled down to a full gale which raised a very dangerous sea. The two trawlers were therefore compelled to stand well out from the land so as to obtain a truer sea, and they were presently joined by the armed trawler *Stronsay*. So passed another trying night, and then next morning the *Dentaria's* wireless recorded the fact that the *Cognac* had been driven ashore. The three trawlers were then able to make for the Tyne. Drifters and trawlers alike, fishermen and merchant seamen, had distinguished themselves during that easterly gale. In weather that was too bad for destroyer or lifeboat, these auxiliary craft had fought and prevailed and saved every man. "I consider," wrote the Tyne Senior Naval Officer in his report to the Admiralty, "that Lieutenant Charles Wood, R.N.R., as is usual with him, displayed the most consummate seamanship on this occasion, the position of the *Cognac* on a lee shore in the gale being most desperate." The gallantry of Skipper Allum was accentuated by the fact that the *Viola's* steering gear had broken down. Although he was offered permission to run for shelter, he succeeded in making temporary repairs while lying-to, and continued to assist the *Dentaria*.

We have referred already to East Coast smacks being

armed to fight submarines. The unrestricted phase of the campaign compelled this decoy idea to be employed elsewhere round our coasts. Thus a motor-ketch called the *Sarah Colebrooke*, belonging to the ancient port of Rye, was taken into service, and having been sent round to Portsmouth to be fitted, cruised about the English Channel for some months. On June 3rd, when twenty miles S. by W. of Beachy Head, she had a fierce engagement with a submarine. Some of the Plymouth and Brixham smacks were similarly armed, and even fitted with motors. Off the north-east Scottish coast steam trawlers, suitably armed and disguised, continued to go out with the fishing fleets, shoot their trawls, and carry on just like other trawlers; then, when a submarine appeared, they would cut away the fishing gear and attack the enemy.

Before the spring was over, there came more raids in the Dover Straits. Since that of February 25th, the disposition of the Dover forces by night had continued unchanged. On the night of March 17th-18th, the moon was in its last quarter and above the horizon only in the early morning. The weather was calm and clear. The northern approach to the Downs was being watched by six armed drifters, spread between the Broadstairs Knoll Buoy and North Sand Head, supported by the torpedo boat No. 4, cruising to the southward. Two days previously the steamship *Greypoint*, bound to the north, had been forced by an engine-room breakdown to anchor about a mile east of the Broadstairs Knoll Buoy. At 12.35 a.m. on March 18th the drifter *Paramount* sighted three or four enemy destroyers approaching from the north-east, passing close to the eastward of the *Greypoint*. The drifter fired the usual warning green rocket, and the enemy replied by shelling the drifters and torpedoing the *Greypoint*. After that the enemy went on for a mile or so to the south-west, then turned round, and came back on a north-easterly course. On this return journey, the Germans continued to fire on the drifters, as well as at the sinking *Greypoint*; they also bombarded both Ramsgate and Broadstairs. The drifter *Redwald* was seriously damaged and had to be beached. The entire crew of the *Greypoint* were rescued by the armed drifter *R.R.S.* The *Redwald* had received five hits, which caused two boxes of shells to explode, seriously wounding the skipper and trimmer, as well as injuring

six other members of the crew. After being beached, she was successfully refloated and brought into Ramsgate. Torpedo boat No. 4 had sighted the enemy near the Gull Lightship and at once proceeded towards the firing at a speed of 15 knots; but she was outdistanced by the German destroyers—another illustration of the value of speed.

At 10.50 p.m. on this night the destroyer PARAGON, while patrolling the barrage with three other destroyers, was torpedoed and shelled heavily at close range. She replied, but presently broke in two and sank: no officers and only ten men were saved. The destroyers LAFOREY and LLEWELLYN came up, but the LLEWELLYN was also torpedoed, though eventually she was able to steam stern first into Dover. From Dover, too, were sent six motor launches. M.L. 241 was able to rescue eight survivors from the PARAGON, and five bodies were picked up by M.L.s 274 and 280. Thus once again came proof that the Dover barrage was not secure against surface raids, and it was decided to mount some guns on the North Foreland.

On March 29th at nine in the morning two German seaplanes crossed the barrage, evidently having a good look at the position of the nets and buoys for the information of their submarines. On the same day, in the early hours, a raid off Lowestoft by German naval forces caused the loss of the British steamship *Mascota*, seven of her crew being taken prisoners. A few weeks followed and then came another raid in the Dover area on the night of April 20th–21st in favourable conditions. Since the raid of March 17th–18th, the patrol system for guarding against night attacks had been entirely altered. Two flotilla leaders patrolled the south-eastern side, while there were reserve ships in Dover. The shore batteries at Foreness and North Foreland had been completed. The enemy's object on this occasion was to bombard Dover and make a demonstration off Calais.

At 7 p.m. on April 20th, twelve of his destroyers left Zeebrugge at 15 knots for the Dover Straits in two detachments; the western force of six destroyers made the Dover barrage about 10.30 p.m., passed the western barrage patrol unsighted, and at 11.30 p.m. shelled Dover whilst heading north-east. They then encountered the

armed trawler *Sabreur* (Skipper Robert Scott, R.N.R.) off Dover. The *Sabreur* was on patrol and the first intimation that the skipper had of the enemy was when they fired on him. About forty shells were discharged, the first bursting in front of the wheelhouse. At this time the *Sabreur* was heading north-west and the enemy north-east, the trawler's port side being fired into from a range of half a mile. The trawler, therefore, quickened her speed, starboarded her helm, made for the westward for a while, and then, as she needed medical aid, turned for Dover. She had received a direct hit on the fore-end of the engine-room casing; a shell had burst in the stokehold, damaging bulkheads and bunkers, but otherwise, surprising to relate, no harm had been done to hull or boiler or engines, and only a trimmer on duty in the stokehold had been injured. On deck only the wheelhouse window, the foremost winch, and the rigging had been damaged. The *Sabreur* had been unable to return the enemy's fire without unduly exposing herself, for the gun would not bear unless the enemy had been brought nearly abeam. Deeming it better to avoid action with so superior a force, the skipper extinguished his lights and made off. These auxiliary patrol craft were in the Straits as anti-submarine craft; it was not expected that they should, on terms of hopeless inequality, fight a division of destroyers, with thrice the speed and overwhelmingly superior gun power.

For the rest, this raid is the story of an historic naval engagement in which the *BROKE* (Commander E. R. G. R. Evans) and *SWIFT* (Commander A. M. Peck) distinguished themselves, fighting the enemy with conspicuous gallantry, but the event concerned the vessels of the Auxiliary Patrol no further. Two more raids occurred within the next few days, when ports were bombarded in which Auxiliary Patrol vessels were resting. The first was on the night of April 25th-26th, when German destroyers bombarded Dunkirk, followed the next night by a similar raid on Ramsgate.

By this time the submarine campaign had reached its greatest intensity, for in April more tonnage was sunk than in any month during the course of the war. Shipping was sunk in the English Channel, in the Bay of Biscay, in the South-West approaches, in the Atlantic, in the Mediterranean, in the North Sea, in the Irish Sea, and off

the South of Ireland. From the positions where the attacks were made, it was evident that the enemy was making a dead-set on the trans-Atlantic trade right away from the seaward limits of the Auxiliary Patrol vessels. In addition to this, cases occurred where the submarines, watching for a favourable opportunity when the patrol had passed round a headland escorting a valuable steamer, would waylay the next oncoming vessel and torpedo her right under the land. Then would come wireless calls, the abandonment of the steamer, the arrival of patrol craft from all points of the compass, the disappearance of the submarine, and the slow towing into port of the sinking steamer surrounded by small armed craft of every description.

The enemy were taking great pains at this period to secure accurate information as to the movements of British shipping, and even employed submarines for this sole purpose. On such scouting cruises, the U-boats were strictly forbidden to attack any vessels. U49, for instance, made a couple of such trips to the English coast during April, and by means of her wireless kept the staff at the base informed of all that was observed. The reason for adopting this policy was that the convoy system of protecting shipping was coming into use in the North Sea.

Meanwhile, the Admiralty were making progress in perfecting every device which promised good results. Directional hydrophones were being distributed to auxiliary patrol bases, and even gramophones, with records of various types of engine and propeller noises, were sent to the bases and proved of the highest value in the preliminary training of ratings.

The enemy attack on the fishing fleet at this stage in the war was very intense. On the morning of April 24th, the Grimsby fishing fleet was at work in a position about ten miles N.E. by N. of the Spurn, under the escort of the two armed trawlers, the *Gaul* (Skipper J. Kime, R.N.R.) and the *Margate*, when a submarine with two guns was sighted four miles to the south-west of the *Gaul*. The enemy immediately opened fire on the fishing trawler *Mayfly*. The *Gaul* steamed full speed towards the enemy, engaged her, and wirelessly sent an S.O.S. signal. For half an hour a keen action ensued, during which the *Gaul* fired seventeen rounds and was hit by the enemy

five times. The *Gaul's* gun was hit and one of the gun's crew was killed and another wounded. The skipper, the second engineman and trimmer were also killed, and the signalman was wounded. The wireless was shot down and it was found that the forepart of the ship was filling with water. At the actual moment when the *Gaul's* gun was put out of action, the armed trawler *Margate* was able to intervene, engaging the enemy at close range. Conditions favoured the submarine, and the *Margate*, after maintaining the action for an hour and a half, sank, taking down with her one officer and eleven men. But this was not by any means the complete record of loss. Four of the fishing trawlers had been set on fire. The *Gaul* endeavoured to launch her boat, but just as it reached the gunwale it was blown to pieces. A fog then came on, hiding from sight the trawlers and the submarine. The *Gaul* herself was in a bad way, but by continuous baling on the part of the four hands from midday to half-past seven in the evening, the water was kept under and the vessel managed to reach port.

This tragic incident illustrated how heavy was the responsibility of protecting the fishing fleets. By the beginning of May, off the Tyne coast, the situation became embarrassing. The claims of the fishing industry had to be carefully weighed against those of the coastal convoys. Trawlers in that area of the Auxiliary Patrol were now employed almost entirely in escorting these convoys. Drifters had, therefore, to be used to protect the fishing trawlers and the herring drifters, besides carrying out the local coast patrols. As a rule fifty or sixty drifters of the herring fleet were out at once, the fishing position being changed nightly. Of the four or five armed drifters looking after these craft, one would have wireless, the Tyne being about forty miles from their fishing grounds. For patrolling off these north-east coast ports during the night so as to prevent enemy minelaying, M.L.s were on duty. On the other hand, much farther along the coast M.L.s were employed during the spring and summer laying mines to cover the seaward entrance of the southern half of the Thames estuary against submarines. They succeeded in laying nearly a thousand mines, and carried out the task with scarcely a hitch.

The armed yachts, in spite of their inevitable drawbacks,



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THE AUXILIARY PATROL: DRIFTERS AND TRAWLERS IN
DOVER HARBOUR.

were still on patrol and escort work. Several, after three winters at sea, had become badly strained and damaged. It had been necessary to pay off some of them, while others had been lost by mine or collision, or submarine, or through stranding. But the bigger and more seaworthy yachts were still keeping the seas and proving most useful units. Evidence was supplied time and again of their deterrent effect on the enemy. One instance may be cited. In the late afternoon of April 12th the armed yacht *Rovenska*, based on Falmouth, sighted the steamship *Borderer*, about fifteen miles south-west of Scilly flying a red flag. The *Rovenska* at once proceeded towards her and learned that a submarine had come up alongside the ship showing four feet of periscope, but had dived on seeing the yacht approach. The *Rovenska* remained with the *Borderer* as escort, and in the opinion of the merchant captain his steamer was saved from almost certain destruction.

By this time the activities of the Auxiliary Patrol were being supplemented by the first experimental convoys. Was the enemy experiencing the effect of this improvement in the varied measures adopted by the Admiralty to defend merchant shipping? There is no shadow of doubt that the German submarines were being hard pressed. The captain of UC77, in reporting to German headquarters, summed up the situation as it affected the U-boat thus: "The principle of effective anti-submarine methods has therefore been grasped by the British, and hampers our operations in the same way as the centralisation of ocean-going shipping has done": and he went on to refer, sadly, to "the numerous trawler groups, yachts, and submarine-chasers" which the British were now employing as escorts. The naval authorities, with better supplies of guns, mines, depth-charges, bomb howitzers, and other offensive and defensive material at their command, were getting to grips with the problem. We can picture, in the light of later knowledge, the chagrin with which captains of submarines found their freedom of action increasingly circumscribed and their craft, as well as their own lives, exposed to new perils as the summer of 1917 advanced. Such a vessel could hardly get outside her base before she encountered the lines of British mine-fields which had been laid so thickly by this period.

Across his track would lie a patrol of British submarines ; then a well-organised force of destroyers, yachts, trawlers, drifters, M.L.s, and aircraft would await her. On the trade routes, enemy submarines were also being harassed by innocent-looking Q-ships or by escorts of convoys. At likely positions where enemy craft might hope to rest on the bottom, or off landmarks where the skippers might want to get a navigational "fix," British mines or mine-nets were in position. When the U-boat was threading her way through the sandy channels of the East Anglian coast, dummy lighthouses caused her to lose her bearings. Permanent hydrophones, laid down several miles from the shore and connected up to listening stations on land, gave her presence away and hunting flotillas kept her on the move, dropping depth-charges at every favourable opportunity.

The United States had entered the war early in the year, and on April 9th Admiral Sims had arrived in England. The first division of United States destroyers had reached Queenstown on May 4th, and at once began to patrol. On June 26th the first U.S.A. troops landed direct from North America in France. The movement of the transports inevitably tempted the enemy to concentrate submarines on the western approaches. It was essential that Germany should do everything in her power to sink any ship whose men or cargoes would prove of assistance to the hard-pressed Allied armies. The submarine commanders well knew that if the attack were made within a few miles of the Irish coast, destroyers, Q-ships, and Auxiliary Patrol craft would be quickly on the spot, and in any case the torpedoed steamship would probably limp into port. Therefore, by the third week in June the U-boats were venturing out into the Atlantic to an unprecedented distance and sinking ships as far out as four hundred miles from the nearest land.

In the meantime, minelaying U-boats continued to operate, and as their work took them close to the land they frequently encountered British trawlers, fishing or patrolling. Having laid their mines, these craft were usually ready to fight. At midnight on June 3rd-4th, when five miles east of Girdleness, the Grimsby steam trawler *Virgilia* (Skipper Alfred Rawlings) was coming home with a full catch of fish from the Faeroes, when

UC77 rose to the surface, capturing her and then sinking her by bombs. The skipper, of course, was taken prisoner and the crew were left in the dinghy, but only after the Germans had thrown the dinghy's mast and sail into the sea. However, a motor launch came on the scene a few hours later and picked the men up. On the following night this submarine was off Hartlepool and attacked a vessel by gunfire. Unfortunately for the Germans this turned out to be a patrol vessel with good guns and even better gunners, whose first shots caused damage to the enemy craft. The captain only just escaped having his head blown off by a shell which passed over him, and several of the gun's crew came rushing aft with their hands and faces covered with blood as visible evidence of the injuries they had received. The captain of the submarine thought it discreet to dive, but a depth-charge exploded by her stern at this moment and shook her so violently that every German on board believed his end had come. Then followed a second depth-charge, which struck one of the oil tanks and burst it, with the result that fifteen tons of oil were lost. A third charge burst just ahead. A few minutes later, the craft fouled some nets, but, by going ahead and astern, she managed to get clear.

Similarly off the Devon and Cornish coasts the war was being waged relentlessly by the enemy against these sturdy fishermen who were still "carrying on." On the afternoon of June 8th, off the Start, four fishing smacks were captured and sunk. There was a special-service armed smack with them, but unfortunately there was no wind and having no motor, she was forced to remain an unwilling spectator. The submarine ceased her destructive operations only when she saw the approach of a destroyer.¹ Four days later, at 10.30 a.m., the armed trawler *Sea King*, fitted with a hydrophone, was off the Lizard when she saw UC66 only four hundred yards away. The trawler at once headed for the enemy, but the submarine submerged. The *Sea King* was commanded by Commander Godfrey Herbert, R.N., himself a submarine officer who had had exceptional war experience and success in command of anti-submarine craft. His second-in-command, Lieutenant E. W. Buchanan, R.N.,

¹ It was as a result of this incident that one of the special-service smacks was this month fitted with a paraffin motor.

had served for a long time in destroyers. No sooner had the enemy submerged than Commander Herbert placed his trawler in exactly the correct spot, let go a depth-charge, and was encouraged by hearing a series of heavy explosions. The depth-charge had hit the submarine, and her cargo of mines were going off one by one. A considerable amount of oil came to the surface a few minutes later. The remainder of the flotilla also dropped their depth-charges and then all vessels listened on their hydrophones. Not a sound was heard. The enemy had been silenced. The steel hull of UC66, lying on the bed of the English Channel, had become the coffin of thirty or more German sailors.

In this same week four of the cross-Channel barrage buoys were damaged by the machine-gun fire of enemy seaplanes. But there were twenty drifters as well as M.L.s patrolling the barrage and they managed to shoot down a couple of the seaplanes. The persistent attention of the aircraft suggested that by this means the enemy were trying to facilitate the passage of the barrage by his submarines. A shortage was now being felt in the supply of German submarine officers of the same high efficiency as many of those who had distinguished themselves in the early days of the war. Neither captains nor crews were quite up to "standard pattern," and men who were serving at sea in the British patrols were struck by the unseamanlike behaviour of many of the German submarine commanders. They were evidently losing their nerve under the terrible ordeal to which they were being subjected. Those who got back home told their harrowing tales of the capabilities of depth-charges and the alertness of the British patrol craft.

Day by day their hope of victory as a result of the intensive submarine campaign was receding. It was not checking the movement of troops from the United States to Europe and since April the amount of merchant shipping sunk had shown signs of a decrease. The smoke-boxes which were being used as screens against submarines made the enemy's operations more difficult. By reason of the increase in the number of craft, many of them supplied with hydrophones, guns, and howitzers, the patrol system off our shores was now more efficient than it had ever been, and the improved training of the crews was not

without its influence. In July the tide of fortune was beginning to turn decisively, and as a result submarines were operating still farther out into the Atlantic, ships being now attacked as far as 800 miles west of Finisterre.

The number of enemy submarines in commission had, however, increased, and the design of the newer boats of the larger size revealed a much heavier displacement. A good many of these craft were for all practical purposes small ocean-going raiders with the supreme advantage over raiding cruisers that they were able to submerge. This constituted a new menace to merchant shipping, in that it extended the limits of the submarine zone.

The new development pointed to no easing of the situation as it affected the Auxiliary Patrol. On July 7th, at half-past three in the morning, whilst the Scandinavian convoy was proceeding from Lerwick towards Holmengraa, a submarine was seen ahead of the yacht *Amalthæa*. The yacht fired on the enemy and the destroyer ARAB dropped depth-charges, whilst the whaler *Pilot Whale*, acting as convoy leader, also attacked with gunfire, whereupon the submarine submerged. An idea of the extent to which ocean-borne commerce was being protected at this time may be gathered from the following figures. On July 11th a census was taken of all the Auxiliary Patrol vessels, and it was found that these consisted of yachts, trawlers, whalers, paddlers, drifters, smacks, and motor launches, employed either on patrol or minesweeping, to the number of 2,246. It would be difficult to exaggerate the importance of the work of these vessels by forcing the enemy to adopt, to his own ultimate undoing, new expedients in the hope of snatching victory from the hands of destiny.

Meanwhile, the necessity had arisen for the employment of large numbers of Auxiliary Patrol craft off the Belgian coast. The history of the barrage inaugurated off that shore by Admiral Bacon has already been traced. During the winter it proved impossible to maintain it, but by the middle of July 1917 it was decided to reinstate it. The Admiral had an increased number of destroyers mounting 4-inch guns at his disposal, and the enemy was showing so much activity with his destroyers at Ostend and Zeebrugge that energetic action was necessary. Moreover, the Flanders submarine minelayers were exceedingly busy. The operation which it was determined to undertake was

to lay both deep mines and mine-nets off the Belgian coast, so as to deprive the enemy destroyers and submarines of the free use of these waters. This was no slight task, as it was important that the nets should be laid without previous warning and with the utmost despatch. To lay the entire line at once was impossible, and it was considered advisable to deal first with those portions that were most likely to be attacked during the operation. The whole force, numbering 102 vessels, was to be collected as nearly at dark as the state of tide permitted, and then the laying was to commence.

There were thus two parts of the operations—the laying of the mines and the laying of the nets. The forces employed by Admiral Bacon consisted of monitors, a light cruiser, a former cross-Channel mail steamer converted into a minelayer, flotilla leaders, destroyers, seven paddle minesweepers, drifters, M.L.s and P-boats. The monitors, paddlers, drifters, minesweepers, destroyers, M.L.s and P-boats assembled at Dunkirk on July 24th, and left in the following order. At 9.40 p.m. came the destroyers escorting the drifters. These drifters laid a line of thirty-two dan buoys which would act as marks for the net-drifters, who would come after. At 10.45 p.m. came another division of destroyers escorting the paddle minesweepers and the net-drifters. The paddlers swept ahead and the P-boats assisted in making sure of the distance between the buoys; at 1 a.m. (July 25th) came the monitors and M.L.s, and two hours later the light cruiser whose duty it was to supervise the destroyers. The minelayer proceeded straight from the Downs, arrived at the western end of her line at 4.30 a.m., and then laid 120 deep mines in the required position. The net-drifters placed their nets in position along a line of fifteen miles in an hour and a half, and on July 28th they prolonged this line still farther. The monitors, protected by the M.L.s, who made smoke screens, bombarded Ostend in the meantime, and then the whole operation was carried out according to plan. The enemy destroyers attacked the drifters and their British destroyer support at long range, but the fire was returned energetically.

The work of barrage laying was not merely an undertaking demanding a good deal of technical skill, but a most anxious task. The best speed of a drifter with

engines recently overhauled and clean bottom was about 9 knots. Most of these units used in the war were built of wood, and in any case they were unsuited to fight against enemy destroyers. Admiral Bacon, who was present in the destroyer *BROKE*, realised that if the drifters were unscreened, not only would it mean a heavy loss in little ships and brave men, but the nets would not be laid and the whole purpose of the operation would be defeated. But, instead of showing initiative, the enemy destroyers pursued the same tactics as on April 24th, 1916, remaining under the shelter of their batteries and firing on our destroyers at long range. The whole operation was regarded by the Admiralty as having been organised and carried out very satisfactorily.

Then came the duty of maintaining a patrol of this twenty-mile barrage for the double purpose of preventing the enemy doing systematic damage to it, and keeping the gear in an efficient condition. The enemy, indeed, wasted no time in interfering with the new barrage. By July 28th he had begun, and by August 5th he had evidently been hauling at it by means of a grapnel, for one was found in the net, both batteries and mine-cases having been destroyed. Further interferences took place on later dates, and German seaplanes were probably responsible for sinking part of the barrage, cutting the wires and so on. The reinstitution of this barrage had been undertaken partly with a view to assisting what was spoken of in inner naval circles as "the Great Landing" of our Army on the Belgian coast. Owing to various reasons this plan was never carried out, but the patrol was maintained, necessitating the employment of over 6,000 naval officers and men. The intention was to land an army of 13,750 between Westende and Middelkerke. The operation was continually postponed and finally abandoned on October 15th.

An interesting commentary on these operations was provided by the minelaying submarine UC61. At 1 p.m. on July 25th, the very day that the British ships to the number of 102 were off the Belgian coast, this submarine had left Zeebrugge on her way to Boulogne and Havre, where she was to lay her mines, thence proceeding to the Atlantic, where she was to shell or torpedo any merchant shipping encountered. She was able to get

through the cross-Channel barrage during the same night, and shaped a course along the coast between Gravelines and Cape Blanc Nez. The weather became thick and evidently she had not allowed for the set of the strong tide, so between Blanc Nez and Gris Nez she stranded on the shoal off the village of Wissant at 4.20 on the following morning. After being abandoned she was blown up. It was not the first time that she had negotiated this barrage. Usually she had passed between the last buoy of the barrage and the Snou shoal, thus rounding the barrage without going either below or above it. She had done this five times. Almost three years of the war had passed and still we had not been able to bar the Dover Straits to the enemy. On examining this submarine it was found that she was fitted with a hydrophone, and thus she could hear the approach of our patrols.

Such operations as were occurring at sea at this period frequently enforced the same lesson—i.e., the interdependence of the various naval forces. An incident which occurred on the night of August 8th–9th illustrated this truth. It was five minutes within midnight, and the armed trawler *Taranaki* was returning from the Tyne to Granton, escorting a merchant ship. Suddenly the trawler observed a patch of white foam close to her starboard bow, and immediately afterwards struck a submerged object with considerable force. The trawler promptly stopped her engines and then they had to be used for several minutes to get the ship clear of the obstruction. There was no question of a shoal, for a cast of the lead gave 35 fathoms. A Court of Inquiry was afterwards held, and the evidence went to show that the *Taranaki* had struck a submarine. A few days later came the news by way of Amsterdam that a German submarine of the largest and most modern type had been towed into Zeebrugge by a couple of torpedo-boats. The submarine had been rammed in the North Sea, and had been severely damaged, losing three or four of her men. It was not absolutely certain that the *Taranaki* was responsible for a German submarine being prevented from operating, but it is highly probable that such was the case. Such unexpected incidents came as a continual reminder of the interaction of events. In saving a merchant ship, the

Taranaki incidentally put a submarine out of action, unless all the evidence was to be disregarded.

More than once a Lowestoft armed smack thought she had sunk a submarine when in fact the enemy had escaped. These disguised sailing craft did, nevertheless, often succeed in destroying German submarines. Of their glorious fights, perhaps the most remarkable is that which occurred on August 15th, 1917. We have cited case after case of the gallantry of fishermen, turned fighters; we have seen them behaving in the most magnificent way in face of the enemy, displaying enterprise, and pursuing their course despite heavy odds. Now we come to the story of one of these men who added distinction to our naval annals. Skipper T. Crisp, R.N.R., was in command of the disguised armed smack *Nelson*. She was operating off the East Anglian coast, pretending to trawl, but was acting as bait for submarines. At 2.45 p.m. the trawl had been shot, and the *Nelson* was on the port tack. The skipper himself was below packing fish, while one of the hands was on deck cleaning fish for next morning's breakfast. When Skipper Crisp came on deck a few minutes later, he noticed something on the horizon, examined it, and then sent for his glasses. Almost directly he sang out an order—"Clear for action—submarine." He had scarcely spoken when a shot fell about a hundred yards away on the port bow. In the meantime the motorman had gone to his duty, the deck hand had dropped his fish and was in the ammunition room, and the gunlayer was standing by his 13-pounder, whilst the other hands, at the word from the skipper, had let go the trawl warp and buoyed it with a dan.

Shell after shell was now coming rapidly from the submarine, and it was about the fourth shell which went through the *Nelson's* port bow just below the waterline. The skipper now put her about on the other tack, and then came three more shells, of which the last struck Crisp, did not explode, but passed through his side, through the ship, and out through the side of the ship. There was no confusion among these hardy fishermen, but the second hand, T. W. Crisp, the skipper's son, took charge of the tiller. Shells were still being fired at the smack, water was pouring in through the holes and the ship was evidently sinking. One of the crew went to

render first aid to the skipper, who was obviously mortally wounded. "It's all right, boy," he said, "do your best." Thus he encouraged his men. Then, speaking to his son, he ordered him to send off a message. He dictated the following: "*Nelson* being attacked by submarine. Skipper killed. Send assistance at once." This was to be sent by carrier pigeon, which was kept on board these craft as means of communication.

The ship was sinking fast—the skipper himself was dying. Only five rounds were now left of the ammunition, and it was time to leave the *Nelson*. The younger Crisp went to his father, lying stretched out along the deck, and heard him say, "Abandon ship. Throw the books overboard." He was asked if they should lift him into the boat, but this intrepid man, who to the last thought only of his ship, his men, his confidential books, and his duty, merely answered, "Tom, I'm done. Throw me overboard." He was in too bad a condition to be moved, so they left him on his deck, took the small boat, and rowed away. In about a quarter of an hour the *Nelson* went down just as the light of day was ending. In this wise the career of Skipper Crisp closed, and he was received into the bosom of the sea in a manner befitting a Viking, a great admiral, or an Elizabethan pioneer. He was awarded posthumously the Victoria Cross, and his son, T. W. Crisp, who was awarded the Distinguished Service Medal, came up to Buckingham Palace to receive the two decorations from the King.

The rest of the story is quickly told. During the night the *Nelson's* survivors rowed about. Towards the morning the wind freshened and blew them out of their course. All that day they pulled at the oars, having fastened a pair of trousers and a large piece of oilskin to two oars so as to attract attention. Once a vessel was sighted and once a group of minesweepers, but they failed to notice the men in distress and passed out of sight. During the second night the weather became finer, and they went on pulling until the next daybreak. At 10.30 a.m. they found a buoy, made fast to it, and by the afternoon a ship came along and they were rescued.

After sinking the *Nelson* the submarine attacked and sank the Lowestoft armed smack *Ethel and Millie* in the same locality. She had nothing more than a 6-pounder,

and was more completely outranged by the enemy's 4.1-inch gun than even the *Nelson*. When the *Ethel and Millie* had used up all her ammunition, her crew abandoned ship. When last seen by the *Nelson's* crew they were ranged up on the deck of the submarine, which was heading east.

Three days later came another disaster to the Auxiliary Patrol force. The place was forty miles east of the Shetlands, and a submarine was sighted and attacked by both the armed trawlers *Benjamin Stevenson* and *Elise*. The first trawler fired five rounds and the submarine replied with seven. The *Elise* fired fourteen rounds, and the submarine about fifteen. The engagement lasted only half an hour. The enemy then disappeared, and both trawlers went in pursuit. She was sighted by the *Benjamin Stevenson* a little later, but she disappeared again. The *Benjamin Stevenson* had been holed and began to leak badly. The *Elise* was undamaged except for two slight dents on the starboard bow and the severing of a link in the anchor cable by shell splinter. Both trawlers set a course for Bard Head. Half an hour later, the *Benjamin Stevenson* had to be abandoned as she was in a bad way. The *Elise* having picked up the crew took her in tow from 1.30 p.m. to 5 p.m., when she foundered. The enemy had displayed the same tactics as when he sank the *Nelson*. Being better armed, the submarine kept out of range of the fishing vessel, and so had little to fear, for the *Benjamin Stevenson* had only a 12-pounder and the *Elise* a 6-pounder. Nine days afterwards the *Elise* was again engaging a submarine forty-five miles S.E. by E. from Bard Head. In this fashion did these undaunted fishermen in trawlers with improvised defences maintain their struggle against the enemy.

Unarmed fishing trawlers engaged in their ordinary peaceful occupation were also helping the common cause. It has been already explained that minefields were discovered by them; ships as well as lives were thus saved. Their vigilance was fruitful in quite another way. During the night of August 30th-31st, an old ship's boat, used for fishing, had mysteriously disappeared from the beach at Druridge Bay (Tyne area). At 9 a.m. on August 31st the fishing trawler *Ranter* was in the North Sea and spoke a boat which seemed generally to answer the owner's

description. It contained several men who described themselves as Danish seamen from a torpedoed sailing ship, and they said they were now making for Holland. This story seemed rather improbable, for they were only twenty miles east of the Tyne. Furthermore, they firmly declined the *Ranter's* offer of assistance on the plea that they had already been torpedoed twice and wanted to sail home. The British seamen, however, noticed that the course they were steering was not in the direction of Holland. Twelve hours later the *Ranter* fell in with the armed trawler *Vidette*, to whom she reported the incident. The *Vidette*, having wireless, sent a report to the Tyne Senior Naval Officer, with the result that the destroyer *BONETTA*, promptly despatched from the Tyne, overhauled the stolen boat with its six occupants. They proved to be escaped German naval prisoners.

Though dissatisfaction had occurred in the German High Seas Fleet from time to time, the condition of the enemy's submarine service had hitherto been less serious. Officers and men who were carrying on the intensive campaign had been given better food and more of it than the men in the big ships, who rarely went to sea. On a submarine coming in for her refit, her crew greatly appreciated their leave, which was on a fairly liberal scale. But now things began to alter, and the crews became, not merely less efficient, but less easy to handle. By the end of the summer of 1917 the German crews were getting so little leave, and so many boats were being lost that the men became thoroughly disheartened. The campaign was falling short of the full and rapid success so confidently anticipated, and the boats were being sent to sea after only short periods of refitting leave. The men, overwrought with submarine voyaging, and weakened in morale by the losses of other submarines and their own narrow escapes, not only did not volunteer for the *Untersee* service, but did their best to avoid it by missing their boat or feigning sickness.

During September one U-boat was working as far north as the Arctic Ocean near North Cape, whilst another, U151, was operating off the coast of Africa. In regard to the first-mentioned, rather a curious incident occurred. At this time along the route to Archangel passed ships with stores and munitions for the Russians; and know-

ledge of these movements explained the interest which Northern waters had for the U-boats. On September 2nd, 1917, the steamer *Olive Branch* was on that route with a cargo of ammunition, her exact position being lat. $72^{\circ} 34'$ N., long. $27^{\circ} 56'$ E. A submarine came along and opened fire at a range of only 250 yards. The second shot landed in No. 4 hold, where the ammunition was stored, and the *Olive Branch* blew up. But the same explosion wrecked also the submarine, which was last seen in a sinking condition with men struggling in the water. Thus did U28 end her career—hoist with its own petard!

But successes were being achieved by the Germans, and successes calculated, as they thought, to impress neutrals. U151, a converted mercantile submarine, similar to the *Deutschland*, carried out a very successful cruise at this period. Leaving Germany about September 3rd she proceeded to the Atlantic by way of the north of Scotland, and operated off Madeira, the Straits of Gibraltar, and thence southward along the African coast to Dakar, afterwards proceeding across to the Cape Verde Islands, and up to the Azores, getting back to Germany just before Christmas. In the course of this cruise, she sank thirteen merchant ships of British, Italian, Japanese, Brazilian, Norwegian, French, Portuguese, and American nationalities, torpedoed a couple of Brazilian steamers in St. Vincent harbour (Cape Verde Islands), and relieved a Norwegian ship of some valuable copper and stores. For his successful voyage Commander Kophamel, her captain, received from the Kaiser the Order "Pour le Mérite."

Inasmuch as submarines were very active off the Yorkshire coast, it was decided to lay British minefields from a position about six miles east of Whitby to about ten miles north-east of Scarborough. This was effected during September. What influence this decision had on the enemy's plans remained to be seen, but early on the evening of September 4th a submarine engaged in the futile task of bombarding Scarborough. The first four shells fell into the sea amongst the minesweepers anchored outside the harbour. The enemy then increased his range and most of his other shells to the number of about twenty fell into the town of Scarborough. Several hotels,

houses and shops, and the railway station suffered damage, chiefly in the form of broken glass. Six of our mine-sweepers at once put to sea and fired at the enemy, but he did not stop to fight.

The scheme of placing the fishing trawlers under naval control, commissioning them and causing them to fly the White Ensign, their fishing crews being enrolled in a special reserve just as if they were in the Auxiliary Patrol and their movements controlled by the Senior Naval Officer of their port, worked satisfactorily. Their armament was at first, however, too light. On July 10th a group of eight of these fishing trawlers on their way to Iceland were destroyed by bombs and gunfire from a submarine sixty miles S. by E. of Sydero. It therefore became necessary to arm them more in accordance with the strength of the newer submarines of the enemy. Thus on September 6th, of the six Grimsby fishing trawlers proceeding to the Iceland grounds, five were well armed and one was fitted with wireless. Two days later six Hull fishing trawlers, similarly armed, left the Humber for the same grounds. Officers of the R.N.V.R. were appointed to each section of six armed fishing trawlers for the purpose of taking charge when a fight with the enemy began.

During the autumn and winter (1917-18) the trawlers and rescue tugs were having a strenuous time, especially those whose duty took them out into the Atlantic. The kind of work which had to be performed may be judged from the following incident. On September 25th two rescue tugs, the *Flying Falcon* and the *Milewater*, were sent out from Lough Swilly. They were instructed to proceed with sealed orders which were to be opened off Fanad Head. They arrived at this point at 9.30 a.m., the orders were opened, and instructions were read to meet, at a certain rendezvous at 7 a.m. on the 26th, a convoy coming from the westward in charge of the sloop PRIMROSE. When the *Flying Falcon* reached the rendezvous, the wind was blowing hard from the S.W., with a nasty cross sea running. On one of the crew going to examine the log, it was found that this had been carried away. At 9 a.m. she fell in with the convoy, homeward-bound, and was ordered to take up a position to the southward at the rear, with the *Milewater* to the northward. About five

o'clock in the afternoon, the steering gear of the steamship *Antillian*, one of the convoy, broke down, and for a time the *Flying Falcon* stood by her until the gear was repaired. About midnight Barra Head light was picked up.

The weather had now become very bad; it was blowing a heavy S.W. gale and the *Flying Falcon* was labouring very heavily. These conditions continued until the convoy was off the Oversay light (Islay), when a tremendous sea broke over the tug, sweeping away the top of the companion way and causing a quantity of water to get down below. The *Flying Falcon* lay on her beam ends in a bad way. She was able to send out wireless calls for assistance, and then another heavy sea broke on board, smashing the hawser grating and washing the hawser overboard. When going over the side the hawser fouled the propeller and the engines came to a standstill. In the trough of the Atlantic sea the little tug seemed doomed. At times it looked as if she would roll right over. In one terrific roll, the coal in the bunkers shifted to leeward so that she could not right herself, and lay right down on her beam ends for twenty minutes.

The weather showing no signs of improvement, the captain deemed it time to lower the port boat, but whilst this was being done a huge wave washed him, his six hands, the boat and all into the sea. Three of the hands and the captain managed to get back to the tug, but the other three were swept away and drowned. In this helpless condition, the tug was drifting shorewards to her doom. The master then called for volunteers to go into the bunkers and trim the coal. This was manfully done and after half an hour's work they had got the ship a little more upright; in fact, the engineers eventually were able to persuade the engines to move. But it was too late. They were so close to the shore that the captain was compelled to let go both his anchors. Wind and sea continued unabated, and after another two hours the cables snapped, the ship drifted ashore, fortunately on a sandy bottom, and the survivors were landed by means of the rocket apparatus.

Progress during these months was being made in the efforts to pick up the sound of the movements of invisible submarines. A new type of hydrophone called the "fish," from the shape of its body, was evolved. After satis-

factory trials in October 1917, steps were taken to supply it to the trawlers, which towed it astern submerged to a suitable depth. The "fish" was connected by cable to the ship, a silent listening cabinet being installed near the bridge. By means of this new hydrophone, it was possible to tell the exact direction in which the enemy submarine was proceeding. During the first few days of October three submarines—U50, U66, and U106—were sunk as a result of the combined operations in the North Sea by our destroyers, submarines, and drifters. Of these one was most probably accounted for in the mine nets of the drifter *William Tennant* (Lieut. J. A. Campbell, R.N.R.). About half-past ten on the morning of October 2nd this drifter, while anchored and keeping constant hydrophone watch, heard the high-pitched sound of a submarine running on her electric motors submerged. Evidently she then got into the mine nets, for there followed a heavy under-water explosion close to the nets, which shook the drifter considerably.

In order to protect the convoys passing to and from the Atlantic by way of the North Channel (North of Ireland), a line of hydrophone drifters was stretched across the mouth of the Clyde and another from the Mull of Galloway to Skulmart (south of Belfast). Though they represented a distinct advance on anything which had hitherto been available, the hydrophones were, of course, still far from perfect, and did not stop sinkings, even of armed ships. On October 9th the armed merchant cruiser *Champagne* (5,360 tons) was torpedoed and sunk off Dundrum Bay at 6 a.m., and this was followed ten hours later by a similar disaster to the steamship *Peshawur* (7,634 tons) off county Down, the 114 passengers being picked up by the yacht *Albion*. Similarly on October 19th a submarine was reported five miles south-west of Corsewall Point during the forenoon. Every precaution was, therefore, taken to prevent attack on a convoy that was passing through the area from the North Channel to the southward, eight M.L.s and drifters, with hydrophones, being sent to listen in the vicinity. When passing through the position 54° 55' N., 5° 22' W., the *Knight Templar*, the commodore ship of the convoy, opened fire on a submarine. The Larne patrol vessels, which were assisting to escort the convoy, at once formed



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"LISTENING-IN" ON THE HYDROPHONE.

a screen between the convoy and the enemy. The convoy passed safely through the area, but the submarine hunt continued with all vessels that could stand the weather, and about nine in the evening M.L. 476 sighted a German submarine, disguised as a fishing vessel, three miles to the south-west of Corsewall light. The enemy was proceeding at 12 knots, but before the motor launch could open fire she had disappeared in the darkness and mist.

The German operations against the Scandinavian convoys which came across the North Sea with cargoes were also being pursued with energy. As has been stated, these vessels were escorted and shepherded largely by vessels of the Auxiliary Patrol. It occurred to the German Headquarters that a raid against the convoys would be valuable for two reasons. First, it would assist the U-boat campaign, in that it would cause the British forces to give even better protection to the Scandinavian trade, thus further depleting the purely anti-submarine patrols. Secondly, the Germans anticipated that the success of such attacks would have a terrorising influence on the neutral crews. For the carrying out of the raid they possessed two light cruisers, the BRUMMER and BREMSE, which had originally been built in German yards to become Russian minelayers. They were notable for their fine turn of speed.

On October 16th the west-bound Scandinavian convoy left Marsten for Lerwick. It consisted of twelve ships, of which two were British, one Belgian, and the rest Norwegian, Swedish, or Danish. These vessels were being escorted by the two British destroyers MARY ROSE and STRONGBOW, in association with the armed trawler *Elsie* and the armed whaler *P. Fannon*. At 6.5 a.m. next morning, when in a position 60° 13' N., 1° 06' E., the STRONGBOW sighted the BRUMMER and BREMSE. At first, she did not recognise them as German ships, but having done so advanced smartly to attack the superior force. It was just daylight; there was a S.W. wind, a heavy southerly swell, and the light was bad, the visibility being not more than 4,000 yards. It was not till the STRONGBOW had made the challenge three times that the enemy bluffed a reply. The STRONGBOW's alarm gongs were sounded and speed for 24 knots was ordered. At 6.15 a.m. the second German ship opened fire, the first salvo entering the STRONGBOW's engine-room, bursting the

steam-pipe. The foremost German ship's other salvo hit the STRONGBOW's forecastle, started a fire in the lower mess-deck, put the foremost gun out of action, and killed most of the gun's crew. The STRONGBOW was now stopped, and at a range of 2,000 yards both ships fired rapidly with frequent hits. The wireless operator and the quartermaster were killed, the captain was wounded, the bridge and the steering gear were wrecked. The enemy then sheered off, and approaching the convoy sank the other destroyer as well as nine of the twelve steamers. The MARY ROSE quickly disappeared, but the STRONGBOW was still afloat. The wounded captain was put on to the raft, but the enemy returned, and swept the STRONGBOW's deck, killing all the men there. At this moment the *Elsie* came up, and was driven off by the enemy. The STRONGBOW was now on fire badly. About 8.20 a.m. the enemy made off back to Germany, and an hour later the STRONGBOW sank. The *Elsie* most gallantly stood by the destroyer and ultimately saved most of the survivors, having previously searched for the MARY ROSE without success. Both trawlers reached Lerwick undamaged as well as three of the convoy, including the two British steamers.

On October 24th the west-bound convoy was again attacked, but this time by a submarine. The steamship *Novington* was torpedoed off the east of the Shetlands (though afterwards brought into Lerwick and beached), and the Russian steamship *Woron* was torpedoed and sunk.

The U-boats continued to make their way through the Dover Straits as before. It became known, for instance, that U58, which was sunk off Ireland on November 17th, had passed through the barrage close to the French side on November 14th at 1.52 a.m. So also had UB18, which got into the midst of a British minefield off Prawle Point on November 17th, and blew up. The position at Dover was that the whole of the offing from Thornton Ridge to Dunkirk was theoretically rendered impassable for the enemy by means of mines and mine-nets. Between the Thornton Ridge and the Dutch limits other mines were laid to make the submarines' voyage precarious. But whatever was done, it was fairly certain that the enemy would use neutral waters. Mines were laid subsequently

across the Schouwen-Zeebrugge track, and every now and again coastal motor boats from Dunkirk used to drop mines off Zeebrugge itself.

All this was based on sound tactics, but still it did not strengthen the defence of the Dover Straits. The barrage had failed. It had been given a long trial and had cost a great deal of money and labour to maintain, but it had proved little more than an inconvenience to the enemy. It had not been for any length of time an effective barrier or even a hindrance to him except for a brief space in the year 1915. The only sound strategy was the employment of deep mines. The fact is that this country had started the war badly equipped with mines both as to numbers and type. There had been difficulties with the mooring gear, the production of non-porous castings, and even with the glass requisite for the horns. Eventually, however, 10,000 mines a month were manufactured, 980 firms being engaged in creating the various component parts.

On October 24th, in anticipation of supplies of the right kind of mine, which became available the following month, the Admiralty approved of the laying of eight parallel lines of mines at depths of at least forty feet below the surface in the case of two lines. The direction was roughly from Folkestone to Gris Nez. On November 21st work on this barrage began, and the operation went on until the armistice, by which time passage across the Dover Straits for any German submarine was almost impossible. The ubiquitous trawler again rendered invaluable aid. The trawler had done such wonderful work in minesweeping, submarine sinking, convoy escorting, and patrolling that no operation seemed complete without her presence. The trawlers *Ostrich II*, *Osta*, *Carmania II*, *Russell II*, *The Norman Hero*, and others were largely responsible for carrying out the dangerous work of dropping mines in the new barrage.

In sailing from the ports of Germany or Flanders to the Atlantic or Mediterranean, there are only two possible sea passages. One is by way of the North of Scotland, and the other is through the Dover Straits. For reasons already given, the latter, though not exclusively used, was very popular with the enemy's submarines. How much the U-boat preferred the Channel passage may be gathered from the fact that during the first eleven months of 1917 at

least 253 times had German submarines negotiated the barrage. The Admiralty, therefore, decided to go ahead with the laying of this minefield, extend the breadth of its lines, and keep the barrage illuminated by flares so that the Auxiliary Patrol vessels might cause the submarines to dive and blow up.

This operation may be said to mark the beginning of the final phase of the anti-submarine war. In effect it was comparable to confining an enemy to a field by means of electric doors: the moment he tried to leave the field he was electrocuted. In the present case, the southern door was Dover Straits, and it was determined to defend that first, leaving the closing of the northern exit to be undertaken later on.

Ramsgate drifters had a most exciting day's submarine hunting at this period of the war with a fine "kill" to wind up with. They had toiled with courage and persistency during these days and nights of the long war. Shelled by German destroyers, attacked by enemy aircraft, buffeted about by bad weather, and never receiving much recognition, they at last came into their own. The story really begins on November 21st, 1917, when U48 set out from Wilhelmshaven, intending to pass through the Dover Straits for a cruise off Ireland. Two days later at 4 p.m. she had already arrived sixty miles N.E. of Dover and then submerged, but at that moment came an explosion, probably due to a bomb dropped by a seaplane. This experience did not improve the morale of the ship's company. About three and a half hours later U48 was heading for the Dover Straits, having rested on the bottom to await a convenient opportunity of getting through. During the night the oil motors gave a good deal of trouble, so that the submarine had to run on her electric motors. The starboard shaft would do no more than 300 revolutions, while the port shaft was running at the usual 450. The probable reason of this was that she had fouled the North Goodwin net barrage: in fact, pieces of the net were afterwards found attached to the propellers.

The enemy seems to have been intending to cross the Dover net barrage between buoys 2A and 4A, but the vessel must have got out of her reckoning and fouled the North Goodwin nets. She was completely off her course, and whilst proceeding on the surface at 3 a.m. on

the morning of November 24th, she ran hard and fast on the north-west edge of the Goodwins. Every seaman who is familiar with these treacherous sands and the strength of the tide in the Gull stream will appreciate the unhappy position of the submarine aground on a November night. Every effort was made to get her off by means of her engines, but she remained firm. There was nothing for it but to lighten her; many tons of oil and a large amount of fresh water were pumped overboard, the ammunition was cast into the sea, and three torpedoes were fired out of the tubes. This lightened the craft so much that she became waterborne once more, though she was unable to get out of the bed she had made for herself in the sand, and so with a falling tide she again grounded. Her position was about one and a half miles N.E. $\frac{1}{2}$ E. from the Gull Lightship.

At 6.30 a.m. it was just twilight. Three drifters, the *Present Help*, the *Paramount*, and the *Majesty*, were sweeping the War Channel for the flow of merchant shipping, when to their great joy they suddenly saw the submarine. In a moment the sweep was slipped and away went the little craft to profit by the chance of a lifetime. One who was present described it thus: "As soon as the submarine was sighted, the *Majesty*, *Paramount*, and *Present Help* were after the enemy like a pack of hounds, and no one could have been more prompt in joining action with the enemy." Although these three drifters between them had only two six-pounders, a three-pounder, and a Maxim gun, whereas the enemy was equipped with a 4.1-inch gun, a 22-pounder, and Maxim gun, to say nothing of his remaining torpedoes, they blazed away at the enemy as they came swooping down in line abreast, closing the range all the time and ignoring the heavy fire which was coming from the enemy's superior armament. About ten minutes later, whilst these little craft were swooping from the north-west the destroyer *GIPSY*, armed with a 12-pounder and 6-pounder, came down from the northward. Both drifters and destroyer maintained a vigorous fusillade. About the same time there arrived on the scene two more drifters, the *Acceptable* and *Feasible*, who also attacked the enemy, while from the southward came the armed trawler *Meror* bringing more guns to bear. Determined to close the range, they kept as near into the Goodwins as their vessels would float. The

Feasible (Lieut. Delves Broughton, R.N.V.R.) kept two hands working the lead throughout the action, and the *Paramount* was so eager to get right up to the enemy that she actually hit the ground thirty yards off the submarine. About a quarter-past seven U48 was seen to be on fire forward. Her captain, Lieut.-Commander Edeling, then had the confidential books destroyed, ordered "Cease Fire," and the ship was abandoned after attaching explosive charges. Overboard jumped the crew, the submarine blew up with a heavy explosion, and one officer and twenty-one men were picked up out of the total complement of forty-three.

Every man on board the British vessels had done well: even the drifters' engineers off watch assisted by passing up ammunition, and the greatest keenness had been displayed by all the drifters' crews. Before the enemy blew himself up, not one of the drifters had remained farther than 100 yards off the submarine, several of the enemy being killed by the Maxim gun fired from the top of the *Paramount's* wheelhouse. For their fine achievement, Lieut.-Commander F. W. Robinson, R.N.R., of the *Gipsy*, received the D.S.O., Skipper E. Hemp, R.N.R., of the *Paramount*, Skipper R. W. Barker, R.N.R., of the *Majesty*, and Skipper T. Lane of the *Present Help*, each were awarded a D.S.C. In addition, the Admiralty set aside a sum of £1,000 for distribution between the crews of the drifters, and in making the award Admiral Bacon added the following remark: "I wish to express my satisfaction at the gallant way in which the drifters named attacked the submarine armed with a 4.1-inch gun. It is one more example of how the Ramsgate drifters and the Auxiliary Service of the navy know how to meet and fight the enemy." It was established at the Court of Inquiry that, when first sighted U48 was afloat and steering S.W., but on being attacked altered course, and that owing to the fire of the drifters and the destroyer, and the action of the tide, she was driven aground. It had certainly been a great victory for the Auxiliary Patrol, and caused a healthy spirit of emulation in the Dover Straits.

Further north the drifters were also able to register a success. They had laid mine nets off Flamborough as far back as October 20th, for it was thought that the submarines used Flamborough Head for fixing their position, and many

convoys and single ships had been attacked off there. Now the labour of placing these nets in position was rewarded, for on December 10th, 1917, UB75 was destroyed.

Two days later came another big raid on the Scandinavian Convoy, which this time was eastward-bound. The incident occurred in about $59^{\circ} 50' \text{ N. } 3^{\circ} 50' \text{ E.}$, and the convoy consisted of one British, one Danish, two Norwegian, and two Swedish ships, all of which were sunk. The escort consisted of the two destroyers PELLEW and PARTRIDGE and four armed trawlers, the *Livingstone*, *Tokio*, *Lord Alverstone*, and *Commander Fullerton*. Early on the morning of the 11th the enemy light cruiser EMDEN, with the Fourth Half Flotilla and the Third Half Flotilla of destroyers, the biggest and fastest which the enemy possessed, left Germany and proceeded up the North Sea. When off the N.E. end of the Dogger, the EMDEN remained behind and the two half flotillas separated.

The Fourth Half Flotilla, probably consisting of five destroyers, proceeded north, torpedoed a British ship about twenty-five miles off the coast soon after midnight, and by 3.15 on the afternoon of the 12th had rejoined the EMDEN at the rendezvous.

Meanwhile the Third Half Flotilla, including four destroyers, after parting company with the EMDEN on the afternoon of the 11th, had steamed up the North Sea and at about 9.30 a.m. sighted the convoy of six merchant ships, two destroyers and four trawlers. Suddenly the Germans appeared from the N.W. and engaged the PARTRIDGE and PELLEW, who were ahead of the convoy on the port and starboard side respectively. The British destroyers endeavoured to draw the enemy away from the convoy, leaving the trawlers to carry on the escort. Three of the enemy were thus enticed and the fourth remained behind to deal with the merchant ships. She sank all six, together with the armed trawler *Livingstone*. As to the destroyer *versus* destroyer action, the PARTRIDGE was soon disabled by a shell which penetrated her main steam pipe. She used her torpedoes, one of which struck a German destroyer, but it did not explode. The PELLEW, owing to a squall of rain, was able to escape, though severely damaged. When the three enemy destroyers came back to join the fourth, they proceeded to sink the remaining three trawlers *Tokio*, *Lord Alverstone*, and *Commander Fullerton*.

The trawlers' 6-pounders had been hopelessly outranged. They never stood a chance against these modern German destroyers. At a range of five miles the *Livingstone* had been hit in the engine-room, cabin, and mess-deck. The *Commander Fullerton* had been struck near the gun platform, then on the mess-deck, then just by the bridge, and many times afterwards. Then came a shot which hit the winch by which the dinghy was being hoisted out, so that the boat dropped into the water. As the trawler began to sink, the enemy lay 700 yards off and kept firing at her. About 6.30 p.m. the survivors were picked up by the *SABLE*. Three survivors from the *Livingstone* had been picked up at 2.20 p.m. by the *SORCERESS*. The enemy took prisoners, from the *PARTRIDGE* and the four trawlers, four officers and forty-eight men, as well as twenty-three of the merchant crews. The whole engagement had lasted not more than three-quarters of an hour, and of the dozen ships, all had been wiped out, with the exception of the *PELLEW*.

On the same evening as the Scandinavian convoy had been destroyed, the French Coal Trade convoy was crossing the English Channel as usual. Among the escort was M.L.357 (Lieutenant J. F. B. Kitson, R.N.V.R.), which was about a mile and a half east of the leading ship. At 7.30 p.m., the motor launch, having just passed through a small bank of fog, suddenly sighted a submarine not more than seventy-five yards dead ahead. There she was, lying broadside on and apparently in the act of submerging. Full speed ahead went the wooden-hulled M.L., porting her helm so as to cross the enemy's track and assail him with gun and depth-charge. The intervention had come too late, for in a few minutes only the conning tower was visible, and as this was abaft the M.L.'s beam, Lieutenant Kitson was unable to train the gun. However, at a speed of 18 knots the motor launch rammed the enemy with such force as to pass completely over her from starboard to port; the impact was so severe that the engines were stopped instantaneously.

The submarine dived at a sharp angle, but not before the M.L. had fired a shell at her. The enemy's track was followed, and when she came to the surface fifty yards away, apparently on her side, the M.L. again opened fire. Six shots were discharged and two were seen to burst

on her hull amidships. Then the submarine disappeared and was not seen again. The M.L. was, of course, badly damaged aft through her pluck in daring to ram a steel ship. She was making water fast and settling down by the stern ; but in less than a quarter of an hour the armed trawler *Hercules IV* got her in tow and eventually beached her in a sinking condition off Penzance. She had been kept afloat until then with the greatest difficulty. The submarine was not sunk, though she was probably seriously damaged. The Admiralty awarded Lieutenant Kitson a D.S.C.

A week later the Dover Patrol had confirmation that they were beginning to assert their will on the enemy, for at 11.42 p.m. on December 19th a very heavy explosion was heard and just after midnight men were seen struggling in the water. One of them, a German named Bleeck, was picked up alive, but he soon expired. In this wise the British mines had accounted for the loss of UB56. There was evidence that other submarines were still getting through, but the barrage of mines was not yet finished. Every day the door was being closed tighter and tighter.

CHAPTER III

THE 10TH CRUISER SQUADRON (I)—MARCH 1916- DECEMBER 1916.¹

THE duties of the 10th Cruiser Squadron became more onerous than ever after the institution of the Ministry of Blockade towards the end of February 1916. It would have been natural to expect that with the more determined prosecution of the blockade policy some further means of carrying it out, or at all events, some strengthening of the blockading force, would have been established, but nothing of the kind was done.

In only two respects was the work of the squadron lightened—first by the issue of the “Statutory Black List” (February 29th, 1916) giving the names of firms known to be working for the enemy, which enabled the captains of blockading ships to decide more readily when cargoes were actually “suspect,” and secondly by a new method (established March 11th) of facilitating the entry of legitimate American exports to Scandinavia by giving “Letters of Assurance,” known by their code-name “Navicerts,” to approved shippers, to enable them to pass their goods through the blockade without examination and resulting delay.

When Vice-Admiral Reginald Tupper (hitherto Senior Naval Officer, Stornoway) succeeded Rear-Admiral Sir Dudley de Chair on March 6th, 1916, the squadron comprised 22 armed merchant cruisers, besides 4 armed trawlers fitted with wireless. Admiral Tupper sailed from Liverpool in the *Alsatian* on March 7th, and on the 8th met Commodore Benson in the *Teutonic* and took over the command of the squadron. The disposition of his ships at that time was :

Iceland—Rockall Patrol : *Teutonic*, *Artois*, *Orotava*, *Gloucestershire*, *Victorian*, *Mantua*, *Columbella*, *Hildebrand*, *Patia*, *Changuinola*, *Hilary* (divided into A and C Patrols).

¹ See Plan facing p. 104.

Rejoining from Liverpool : *Alsatian*.

Rejoining from Swarbacks Minn : *Motagua*.

Rejoining from Portsmouth : *Moldavia*.

Proceeding to Liverpool : *Almanzora*.

At Liverpool : *Andes, Orcoma, Virginian, Otway*.

At Swarbacks Minn : *Ebro, Patuca*.

Detached (White Sea) : *Arlanza*.

The protection of the White Sea trade route had always been one of the duties of the squadron, and it had become increasingly important during the autumn of 1915, when very large supplies of guns and ammunition were being sent to Archangel from France. In November cruisers from the Grand Fleet had also been detailed to watch the route. Archangel was badly equipped as a port, and was further handicapped because it was entirely closed to all traffic by ice for nearly six months in the year. It had also no direct railway communication with Petrograd. But it was the only entrance left to European Russia from the sea, after the closure of the Baltic ports, and the blocking of the Black Sea when Turkey joined the Central Powers.

It was therefore only to be expected that the port would be heavily congested, and the Germans were not likely to miss the opportunity of inflicting damage. The presence of minelayers off the entrance to the White Sea became evident early in the summer of 1915, and in August, as the Russians found themselves inexperienced and helpless to cope with the danger, a flotilla of eight minesweeping trawlers had been sent out from England.

In October an Allied Military Mission, consisting of General Wolfe Murray and his Staff, and Captain Corbel of the French General Staff, sailed for Archangel in the *Arlanza*. She was to bring back Admiral Roussin and other members of a Russian Mission to England, who were coming to discuss the problems associated with Archangel. She sailed on her return journey on November 14th, but had not gone very far when she struck a mine off Lumbovski, near Svyatoi Nos, a headland on the Murman coast, where ships stopped for convoy through the swept channels. A Wilson liner, the *Novo*, happened to be near, and took off the passengers, and the *Arlanza* was towed by a tug and two British minesweepers into the little

harbour of Yukanski, near Svyatoi Nos. The Russians had no facilities for repairing her there, and were unable even to arrange for her to be towed up to the ice-free port of Alexandrovsk, and it was decided that she should remain where she was for the winter. The *Orotava* was sent out with supplies for her, and brought home her captain and all her crew, except a "care and maintenance" party, who were left to face the cold and discomforts of a very rigorous winter in an ice-bound harbour.

It was not till April 1916, when the old cruiser INTREPID went out with two trawlers to tow her off that the *Arlanza* was rescued. Even then, she owed a great deal to the repairs that her crew had effected during the long and dreary winter months they had spent at Yukanski. The INTREPID and the trawlers broke the ice and got the *Arlanza* out of the harbour with considerable difficulty. The INTREPID started to tow, but the tow broke, and the cruiser had to help the trawlers which had become fast in the ice. The *Arlanza* managed to move slowly under her own steam, following the others, until she got to Alexandrovsk, where she found the battleship ALBEMARLE which had come out during the winter to serve as an ice-breaker and to help the traffic generally. With the ALBEMARLE's assistance, the *Arlanza* was patched up, and in June was towed back by tugs to Belfast for refit. She did not rejoin the 10th Cruiser Squadron until November 1916, and thus the White Sea minefield, remote as it seemed to be, had deprived the squadron of a newly commissioned merchant cruiser for over a year, at a time when every unit of the force was most urgently needed for the blockade.

The difficulties with ice were not confined to the White Sea. When Admiral Tupper first joined the squadron in the spring of 1916, the endeavours of neutral ships to evade the patrols by going north of Iceland had begun again, and the *Motagua* was detailed to investigate ice and weather conditions in that region and also to keep a good lookout for enemy raiders, who might attempt to get into the Atlantic by that route.

The passage by the north of Iceland was reported navigable, and probably on account of frequent rumours that raiders were starting from Germany, a second ship, the *Ebro*, was sent on March 12th to patrol with the *Motagua* off the North Cape, up to the edge of the ice pack.

The *Moldavia* was stationed off the Portland Light (south of Iceland) to maintain wireless communication with the other two ships, and also to intercept any vessels making the south coast of Iceland.

The *Motagua's* own report revealed the difficulties with which she was confronted. Proceeding along the south coast of Iceland on March 12th, she ran into loose ice, but patrolled off Staalbiorg Huk, and discovered by reports from trawlers that the ice generally came down about the end of March, but that there was, as a rule, a space of clear water right round the land through which a ship could work her way. On March 14th she proceeded north to meet the *Ebro*, but found the ice of varying density in $66^{\circ} 20' N.$ A ship might have made her way near the land, but with the ice moving in dangerous masses it was not advisable to attempt a passage; a fishing boat reported loose ice as far northward as the North Cape, and heavy pack ice to the eastward. After examining the ice edge, at considerable risk, the *Motagua* returned south.

On March 15th the ice to the north-west was found to be receding; it had moved apparently 10 miles in two days. That night the *Motagua* patrolled off the North Cape, and found no ice there, but in the morning she proceeded east, and in about $66^{\circ} 35' N.$, $21^{\circ} 28' W.$, sighted such heavy pack ice to the north that she was forced to turn south again, skirting the edge of the ice, and picking a perilous path through numbers of small "bergs" and "growlers," which extended south as far as could be seen. The ice then trended to the north-east and the *Motagua* resumed her original course. The movement of the ice with the wind from the north and the considerable amount of loose ice near the land, which became dense out to sea, and the possibility that another pack might be drifting from the North Cape and cutting off any possibility of retreat, forced the *Motagua* to the west again, and she resumed her patrol with the *Ebro*. On March 17th she left the patrol and sailed for the Clyde.

Captain Webster, of the *Motagua*, pointed out that the part of Denmark Strait north-west of Iceland was the key to the situation for ships going round to avoid the patrols. If that part of the strait were blocked with ice, in all probability ice extended from Iceland to Greenland without a break, and if the ice were clearing away, it started moving

in the strait first and moved to the eastward, so that a ship going round the North Cape and finding it clear, even though ice had been there till recently, would probably find the north coast of Iceland fairly free in a day or two.

The passages through the ice varied considerably, and added to the difficulties of the patrol, but there was no doubt that a considerable amount of Norwegian trade—the skippers evidently knew how to take advantage of the moving ice—attempted to evade the patrols by this somewhat dangerous route.

On March 19th the *Changuinola*, sent up from the east to relieve the *Motagua* on the Iceland Patrol, reported that she had arrived at the North Cape, after passing through all the dangers of loose and pack ice, and had joined the *Ebro* to patrol the open channel, about twenty miles wide, between the edge of the ice-field and Straumnaes.

The *Moldavia*, patrolling off Isa Fiord, boarded the Norwegian steamship *Gustav Flack* on March 31st. The Norwegian attempted to escape into neutral waters, even while the boarding boat was being lowered from the *Moldavia*, and was only stopped by a shot across her bows. She was ostensibly bound for Bergen, with wool and skins, and was sent into Lerwick with an armed guard. Eventually she came before the Prize Court with an incriminating cargo.

The provision of the extra patrol of three ships off Iceland, partly no doubt necessitated by the alarm as to enemy raiders, was a matter of serious difficulty to the new Admiral of the 10th Cruiser Squadron. He represented very strongly to the Admiralty the necessity of keeping the squadron up to its full strength of twenty-four ships. At the time it had been reduced to twenty-two, and one of the number, the *Arlanza*, was still ice-bound in the White Sea. The *Almanzora*, repairing at Liverpool after suffering damage by fouling the boom defence at Swarbacks Minn in a gale, was being greatly delayed by labour troubles in the shipyards, and the *Andes* was still being detained for the court-martial after the *Alcantara-Greif* action.¹ The absence of these vessels reduced the number available to nineteen. The *Artois* (late *Digby*), which had lately been taken over by the French and attached to the 10th Cruiser Squadron, had developed so many defects that she was almost continually under repair.

¹ See Vol. II., pp. 153-4.

Ships were, necessarily, often detained in harbour for repair or by bad weather, and the average number of ships on patrol was generally only eleven, less than half the reputed strength of the squadron. During the preceding year only one ship had been kept on patrol north of Iceland, but with two more in that region the important "A" patrol was sometimes reduced to a single ship. The "C" patrol had also been moved to 15° W. owing to the submarine menace, and the consequence was that a large gap existed on the trade route through which traffic might pass without being intercepted. The Admiral considered that at least twelve ships should be constantly on patrol, and to maintain that level, at least twenty-four ships were necessary, to allow a margin for coaling, repairs, etc. Even the *Avenger*, a new armed merchant cruiser, which was due to join the squadron, had been lately detailed for other services. At a later date, the *Princess*, also a newly-fitted ship, was similarly detached when actually on her way to join the squadron. She was a German prize, originally fitted out for the 10th Cruiser Squadron, but was found to be too slow. The *Armada* Castle from East Africa was sent to take her place.

At this time (March 1916) the Admiralty, embarrassed by many difficulties, could only reply to Admiral Tupper that it was impossible either to increase the number of armed merchant cruisers, or, as the Admiral had suggested, to detail extra armed trawlers fitted with wireless to strengthen the patrols. All the available small craft, it was stated, were wanted elsewhere.

The two French cruisers, the *Artois* and *Champagne*, which were supposed to be an addition to the squadron, were inspected by the Admiral on March 25th, and were said to be in good condition, and the crews healthy and smart in appearance, but the *Champagne* seems to have been used by the French entirely for carrying stores and passengers to Archangel. She was not included at that time in Admiral Tupper's command.

The weather during March continued to be very bad, with frequent squalls of snow and hail. There were renewed reports of enemy submarines, and it was suggested that the lights off Swarbacks Minn should be extinguished and exhibited only when a vessel was approaching the harbour; but as a ship of the 10th Cruiser Squadron was expected to

arrive almost every day about dawn, Admiral Tupper considered that the extinction of lights, except for admission of ships, would help rather than confuse a submarine, as the enemy would know when an incoming vessel was expected.

These suggestions point to the constant anxiety which existed with regard to enemy submarines. At one time it was thought that they used only the Fair Island Channel, south of the Shetlands, but as the larger U-boats became available, and were able to remain longer at sea, it was known that they were beginning to use the more northern route.

Admiral Tupper suggested that the approaches to Swarbacks Minn could be better secured by additional Auxiliary Patrol vessels, but the Admiralty could not supply them. The Auxiliary Patrol trawlers from Lerwick were nearly always employed north of Muckle Flugga, or north-east of Out-Skerries, and none could be spared to help the four trawlers and four drifters stationed at Swarbacks Minn to patrol the west coast. On April 21st the Commander-in-Chief informed Admiral Tupper that six trawlers would shortly be available for Iceland, and would be ready to start on May 24th to work on the north-east and east coasts of the island, and on the south coast off the Portland Light, but that was in order to stop the trade that was evading the blockading patrol rather than to guard against submarines. Submarines continued to be reported in northern waters, south of the Shetlands, at the end of March, and several times during April. On April 14th two were reported off Muckle Flugga.

An armed guard from the *Patuca* had an experience of the reality of the submarine danger at this time. On March 13th a Norwegian barque, the *Pestalozzi*, was detained by the *Patuca* while on her way to South America, and sent in to Stornoway with an armed guard. She encountered north-easterly gales which prevented her from making the port, and on March 23rd was stopped by the U28 in 58° 18' N., 12° 0' W. The master of the *Pestalozzi* was ordered on board the submarine, and forced to disclose that he had a British armed guard in his ship. The officer in charge, Sub-Lieutenant J. C. Bate, R.N.R., and the five men of the guard were sent for, and the German commander made prisoners of the officer and a leading seaman, took possession of the arms and ammunition,

sent the remainder of the guard back to the *Pestalozzi*, and ordered the master to continue his voyage to Santa Fé, and there hand over the four Englishmen to the German Consul.¹ Apparently the sea was high, and no one from the submarine boarded the *Pestalozzi*, but four trips were made between her and the U28, and three of the four boats she carried were swamped or stove in, and had to be abandoned.

Two months later, May 28th, the GLASGOW, warned by the Admiralty that the *Pestalozzi* had not arrived at Stornoway, and that no one knew what had happened to the guard from the *Patuca*, intercepted the barque in the South Atlantic, and took off the remaining four members of the guard. As their arms had been removed, they had been unable to persuade the crew to go to a British port, and two British steamers which had been asked to take off the guard had refused, one because she had no boats to fetch them, and the other because she was short of provisions. The master of the *Pestalozzi* said that he had refused to go anywhere but to his port of destination with only one remaining boat. He feared another attack from a submarine, especially as his last ship had been sunk by a submarine, and he had been warned that if the *Pestalozzi* were seen making for a British port she would be sunk without warning. The master attributed his misfortune to the fact that the officer in charge of the guard had insisted on going to Stornoway, and would not allow him to make for a north Irish port, such as Londonderry, which he could have reached with a fair wind in a few hours. On June 3rd the *Pestalozzi* was released and allowed to continue on her voyage. It was afterwards arranged by the Admiralty that an armed guard should have the option of taking a vessel to the nearest port for examination.²

The alarm of German raiders was raised again, on March 28th, when it was reported that a raiding cruiser

¹ In a semi-humorous account of the episode published in the German Press, it was said that the commander of the U28 refused to take the remainder of the guard on account of their "dirty dungarees."

² After the American protest of April 20th against the sinking of the *Sussex*, the German submarine orders for trade warfare were cancelled, and all the U-boats were recalled from the North Sea by wireless on April 24th. Of course this was not known in England at the time, and a new alarm was raised when Admiral Scheer sent out his sixteen submarines to scout on May 15th.

was possibly attempting to pass out to the westward. On April 6th there was a further alarm of a large steamer sighted twenty miles north of Muckle Flugga, steering W.S.W. The *Orcoma* and *Orotava* (the one on her way to Swarbacks Minn, and the other leaving the harbour) were ordered to intercept the suspected steamer, and the *Patuca*, which was making for the Clyde, was also warned, but the suspected ship was not sighted.

The excitements of the chase were often enhanced in a manner unknown before in any war by wireless calls from distant ships. The excitement of the captain of one of Nelson's frigates can be imagined if he had heard two of his future prizes talking—even though stammering and stuttering unintelligibly in the distance—to each other! During April the American-Norwegian mail steamers, *Kristianiafjord* and *Bergensfjord*, were especially under suspicion, and patrols were organised to find them. On April 8th faint wireless calls were heard from one to the other. It was evident that the ships were systematically avoiding the usual routes. The Admiral suggested that they should be intercepted near their terminal ports. The *Bergensfjord* was again heard about 9 a.m. on the following day calling the Bergen coast station, but no bearing could be obtained by the directional wireless. A Norwegian steamer reported that she had sighted the *Kristianiafjord* in 54° N., 27° 30' W., on the 6th, and it seemed that both ships had passed south of Rockall without being seen.

These two ships had made a number of voyages since the war began, and had been intercepted over and over again by the 10th Cruiser Squadron, but they got through fairly often without being caught. The Commander-in-Chief on one occasion wrote very strongly about the *Kristianiafjord's* attempts to evade the patrol by steaming without lights. He said that she ran the risk of being taken for an enemy raider and fired at without warning. As she had a number of passengers on board the risk to life was very great. Between January 1st, 1915, and April 17th, 1916, the *Bergensfjord* made 12 journeys east and 11 journeys west. She was intercepted 8 times going east and 5 times going west. The *Kristianiafjord* made 11 journeys east and 12 west. She was intercepted 3 times going east and 6 times going west.

It was concluded that the master of the *Bergensfjord* could not be trusted to abide by his agreement to follow the route laid down by the British Admiralty, and the Norwegian-American Line were informed that their coal supply would be stopped until their mail steamers called at the examination ports as requested. The *Bergensfjord* must have passed through the patrol on the night of April 27th, or the next day, though dispositions had been made to intercept her. She did not use her wireless, but if she had kept to the prescribed route she must have been caught. On the 30th the *Kristianiafjord*, after an attempt to escape, was intercepted by the *Motagua*.

On May 18th on her return journey to New York she was again caught by the *Moldavia*, and sent in to Kirkwall with an armed guard. The *Alsatian* tried to intercept the *Bergensfjord* by her wireless direction finder on May 21st. At one time her position seemed to be about 40° on the *Alsatian's* starboard bow, and it appeared certain that she would be found, but her next signals were much fainter. She had passed through the Western patrols in a fog! It was afterwards found that she had called at Kirkwall under directions from her owners, who, possibly fearing that they might lose their coaling facilities, had ordered their vessels to call voluntarily at Kirkwall when eastward-bound. Both vessels stopped there of their own accord on their next journey, on June 9th and 11th respectively.

The explanation of the difficulty was that at the beginning of the war it was supposed that the 11th Hague Convention (1907) guaranteed the inviolability of the parcel as well as the letter mails. But in 1915, when it was realised that goods on their way to and from enemy countries were being sent increasingly by parcel post, it was agreed that the Convention applied only to letter post, and from September 23rd, 1915, onwards, the Allied Governments exercised the right of seizing contraband or enemy goods sent by parcel post. One of the first seizures was from the Swedish mail steamer *Hellig Olav*, when she called at Kirkwall for examination; she was found to be carrying 8,000 lb. of raw rubber made up in small parcels and sent from New York to a Swedish firm at Gothenburg, known to be the centre of the contraband trade between Germany and Sweden. At the same time,

though the steamship companies were not actually implicated in this illicit trade, they were certainly anxious to deliver their mails to time, and to this was due their anxiety to avoid the delay of examination. Opening a number of small parcels was naturally a slow process, though as time went on it was quickened as much as possible. During April two other mail steamers, a Norwegian and a Dane, were sent in with very heavy enemy mails and some suspected Germans on board.

In the second week of May the number of ships stopped for examination rose to 88, of which 21 were sent in with armed guards. It was supposed that the increase was partly due to Dutch vessels proceeding "north-about" instead of going through the Channel, and also to the reopening of the White Sea, though the port of Archangel was not formally declared open till June. The passage north of Iceland was also declared free of ice, and the *Gloucestershire* and *Ebro* were sent up to report on the passage.

On May 19th, about 4 p.m., orders were received from the Commander-in-Chief of the Grand Fleet that owing to the submarine threat—the first report of the scouting submarines sent out by Admiral Scheer before the battle of Jutland—the ships of the 10th Cruiser Squadron ("A" and "C" Patrols) were to take up the Western Patrol (from 55° N. to 57° N., 15° W. to 19° W.). The "E" patrol was to remain north of Iceland and the *Alsatian* north of the Faeroes to maintain wireless communication. When the German submarines were first sent out on this occasion it was believed that another attack on trade was imminent. Admiral Scheer's plan at the time was really another raid on the east coast of England at Sunderland.

A submarine was reported coming south from Muckle Flugga on the 22nd, and a destroyer with two armed trawlers was sent to look for her, but without result. Hostile submarines were also reported off the Faeroes on May 17th and 20th, and were thought to be searching for the 10th Cruiser Squadron. It was also said that a large enemy submarine had called at Westmanhavn in the Faeroes on May 28th, and the *Columbella* fired eight rounds at a supposed submarine on May 26th in 60° 50' N., 2° 21' W.¹

On the day of the battle of Jutland (May 31st), at about

¹ Possibly U75, which laid the minefield where the HAMPSHIRE was sunk.

6 p.m. the 10th Cruiser Squadron, under orders from the Commander-in-Chief of the Grand Fleet, took up the Eastern Patrol, on a line N. (true) from Muckle Flugga. This move had nothing to do with the battle, or the expected movements of the High Seas Fleet; it was entirely due to a report from the Admiralty that the raider *Möwe* had sailed from Wilhelmshaven, and that another raider the *Niobe* (or *Independent*) was expected to sail from the same port on June 1st.

At 6 p.m. on June 1st the Commander-in-Chief of the Grand Fleet directed the squadron to continue the "Muckle Flugga" Patrol (on a line due N. from Muckle Flugga), and directed two ships to be sent north of the Faeroes; a cruiser from the Grand Fleet with an armed boarding steamer was despatched to patrol between the Faeroes and Shetlands, owing to persistent rumours that raiders were coming out. On June 3rd the line was altered to join a position in $59^{\circ} 35' \text{ N.}$, $7^{\circ} 30' \text{ W.}$, to the coast of Iceland, and two armed trawlers were sent to patrol north of the Faeroes. During this period (from May 31st to June 3rd) wireless silence was strictly observed. Nothing was seen or heard of any raiders, after all the excitement, and it was assumed that they had gone north. Admiral Tupper kept two ships off the North Cape in case they attempted to break out in that direction, but as Admiral Jellicoe observes in his book, "nothing came of it."¹

It was afterwards remarked at the Admiralty that the 10th Cruiser Squadron had not taken up the position assigned to it in "Battle Orders" in the event of a fleet action, and that it was very far from the scene of action on May 31st–June 1st. This was explained by the altered situation in view of the expected raiders. Whether that rumour had been purposely spread by the Germans in order to divert the squadron to more distant waters, or whether they really meant to send out raiders at the time, but were prevented, is not known.

Possibly the repeated rumours of coming attacks on commerce by cruisers were natural, as the trade warfare by submarines died down.² At any rate, it was not till

¹ *The Grand Fleet*, p. 296.

² The German plan seems to have been rather to devote their efforts to minelaying.

June 11th that the 10th Cruiser Squadron went back to the usual Iceland-Rockall Patrol. The passage round the North Cape was very systematically blocked again by the squadron on June 26th. It proved to be a record day, as 26 vessels were intercepted, and six were sent in with armed guards.

The constant hunt for raiders sometimes caused an exciting pursuit when a vessel that could not be identified easily was sighted. On June 28th, at 9 a.m., in $62^{\circ} 57' \text{ N.}$, $14^{\circ} 15' \text{ W.}$, the *Artois* (southern ship of the "A" patrol) reported that she had been following, at 13 knots, the smoke of a west-bound steamer since 7.30 a.m. She was directed to follow at full speed, and the *Teutonic*, from the south and the *Orcoma* from the north, also at high speed, started to chase the unknown vessel. The hunt continued all day, as the *Artois* could keep in touch but could not gain on her quarry. At 7 p.m. the *Orcoma* sighted the supposed raider at a distance of about 16 miles in $61^{\circ} 43' \text{ N.}$, $18^{\circ} 40' \text{ W.}$, and reported her as a steamer with two masts and two funnels. At 11 p.m., when the *Teutonic* was gaining on her, the vessel stopped, and was boarded by the *Orcoma*. She was a Russian, the *Czar*, from Archangel to New York, in ballast, with 145 passengers. She was allowed to proceed and the cruisers returned to their patrols.

Although the submarine attack on trade had practically ceased, the Germans were still making full use of their minelaying submarines, as was proved by the minefield west of the Orkneys on which the HAMPSHIRE was so tragically lost early in June. On July 4th the Commander-in-Chief warned Admiral Tupper that minelaying submarines might pass Fair Island from the eastward at any time after 4 a.m. on the 5th, or Muckle Flugga six hours later. The "C" patrol was therefore moved 60 miles to the westward. It seemed that there were indications of renewed submarine activity, probably in order to attack the trade with Archangel, and the patrols had to be continually shifted. The traffic to the White Sea was very heavy during June, and the ships of the 10th Cruiser Squadron were constantly on the route to protect shipping against possible raiders. In July a regular patrol by Grand Fleet cruisers was started, and on July 7th the Grand Fleet patrol north of the Shetlands was strengthened.

For some time a cruiser and an armed boarding steamer had been on duty there, and this force was increased to two cruisers and two destroyers.¹

Another record was made by the 10th Cruiser Squadron during the first week of July, as no fewer than 112 ships (including 40 fishing vessels) were intercepted and examined; 27 of them were sent in with armed guards. There was considerable suspicion at the time of Dutch fishing vessels with cargoes for Holland. The officer in charge of the armed guard from the *Hildebrand*, placed on board the Dutch trawler *Eveline*, on July 2nd, discovered that each barrel of cod liver fetched between £8 and £9 at Ymuiden, and that they were intended for transmission to Germany.

When the *Patia* called in at Sigle Fiord in Iceland, about this time, the Vice-Consul told her captain that a very large trade in fish oil was being carried on, and many ruses were adopted to avoid the Icelandic laws regarding export. The Admiral accordingly sent up two trawlers to help the "E" patrol off Iceland to deal with the fish and oil trade. The number of small vessels employed made it very difficult to stop or examine them all. Apparently the captains of ships trading to Iceland had to sign an agreement that they would call for examination at a British port, under a penalty to the Icelandic Government. This penalty, a fine of £5,000, was incurred by a ship called the *Edith*, which was lying at Reykjavik while the *Patia* was there. The prosperity of the trade can be judged from the fact that any shipping company thought it worth while to run the risk of incurring so heavy a penalty by attempting to evade examination, but there seems also to have been considerable resentment about the delay, sometimes inevitable, when a ship called for examination at a British port.

On July 10th the Commander-in-Chief of the Grand Fleet again warned the Admiral that a raider of the *Möwe* type might attempt to pass through the patrols at any time after daylight on the 12th, and the dispositions were made to intercept her. Wireless silence was also maintained, but as no news could be obtained of the raider the normal patrol was resumed on July 15th. A raider did make an effort to get out during July, for a British merchant vessel, the *Eskimo*, was captured on the 26th, off

¹ *The Grand Fleet*, pp. 427, 431.

Risor, in Norwegian territorial waters, by a German armed merchant cruiser. No further operations of the kind seem to have taken place till the *Möwe* got out again in November 1916.

Dense fog was experienced during the last week of July, and the patrols could only feel their way blindly, so that the number of ships intercepted was much smaller than usual; but considerable precautions were taken in order to intercept the famous submarine liner *Deutschland*, and her supposed consort, the Norwegian steamer *Haugland*. The *Deutschland* was, of course, designed as an experiment for using submarines to run the blockade; she was unarmed, but had a cargo of valuable chemicals. She sailed for America in June, and reached Norfolk, Virginia, on July 9th. It was on her return voyage that great efforts were made to catch her. She was reported to have sailed from New York on August 1st, and would be due to pass the patrols on August 12th. All the available ships of the 10th Cruiser Squadron (twelve) were spread on a line from $59^{\circ} 10' \text{ N.}$, 7° W. , to the coast of Iceland, ships being 30 miles apart. Two trawlers were detailed to patrol west of the Faeroes, as it was thought possible that the *Deutschland* might meet another German submarine in that locality as an escort. Four trawlers from Stornoway were also sent to keep watch on the Rockall Bank, where it was hoped that they might force the great submarine to dive again, and keep her down till her batteries were exhausted.

The day, August 12th, on which she was expected was misty and foggy, with a considerable sea running, but a Dutch steamer sighted a supposed submarine twenty-five miles west of St. Kilda at 9 a.m. It was thought that this might have been the *Deutschland*, but she was not seen by the patrols, and the Dutch ship did not report till the next day. She probably passed at a later date, for she arrived in Germany on August 23rd. The patrol lines were changed again on August 15th, but fog greatly hampered the work of the squadron throughout that week.

There were rumours of submarines near the Faeroes on August 16th, and the ships on "A" patrol altered their positions, but the rumours were not substantiated, though reports of submarines farther south were received

fairly often. During August the number of submarines reported in the North Sea was very large, but their target seems to have been the Grand Fleet itself, especially on August 19th, when the light cruisers NOTTINGHAM and FALMOUTH were sunk. The chief effect of these rumours or reports on the blockading squadron was that the line of patrol was altered for the time. All the reports of submarines off the coast of Iceland were eventually proved to be without foundation, and were possibly caused by the appearance of the northern fishing boats. These boats were thirty feet long, with a cabin aft, and one mast, and were propelled by a motor; it was quite possible to mistake them for submarines.

As the "rationing policy" for neutral countries became more strictly enforced, the work of the squadron was not lessened. The number of ships intercepted and sent in during the week ending September 16th was the largest in any one week since the beginning of the war. The majority were caught by the "E" patrol, consisting of two ships of the squadron and two armed trawlers off Iceland. One hundred and sixty-two vessels were intercepted altogether, and fifty-eight were sent in with armed guards, and fourteen without armed guards. These statistics supply an index to the activity and efficiency with which the 10th Cruiser Squadron was working in conditions of the greatest physical and political difficulty. During October the Commander-in-Chief of the Grand Fleet congratulated the squadron on their success between September 1st and 21st, when 435 vessels were dealt with, and 123 sent in. The ships on patrol were only 10; ships proceeding from one patrol to another, or rejoining from harbour, 7; armed trawlers, 4; ships going off patrol to coal or refit, 7, and 2 armed trawlers. It was a fine record for so small a force. The squadron had been strengthened in August by the addition of the *Orvieta* (late minelayer).

Some experiences of the armed guards sent to bring suspected neutral vessels into British ports for examination were curious and interesting, and illustrated the very considerable risks involved. On August 10th, in 56° 38' N., 15° 5' W. (approximately south of Rockall Bank) the Norwegian steam trawler *Hareid* of Aalesund was intercepted and boarded by the *Hilary*. An armed

guard was detailed to bring the *Hareid* into Lerwick; Lieutenant W. J. Canner, R.N.R., was placed in command. His first discovery was that there were no navigating instruments of any kind on board, except the patent log. The master also said that his compass had a big error, but he did not know how much! The weather during the whole of the passage to Lerwick was such that no observation was obtainable. Lieutenant Canner, with the resourcefulness characteristic of British seamen, made a lead line from some cod line and by continuous soundings eventually reached Lerwick after being five days on board, the last two without fresh water, and with the whole ship's company complaining of thirst.

After three days on board, the course by compass should have brought the ship to westward of the Shetlands. By the soundings it seemed that she ought to be north-west of Muckle Flugga, and a Swedish sailing trawler also gave their position as about thirty miles north-west of Muckle Flugga. The course was continued until Lieutenant Canner considered that the ship was about twelve miles north-west of the point. At that time (noon, Sunday, August 13th) the chief engineer reported that he had only enough coal for another twenty-four hours, and that the fresh water was nearly finished. The course was altered to keep to westward of the Shetlands, and then to the east to make the land, but a dense fog came on, and as the soundings increased suddenly to about 107 fathoms, at 3 a.m. on Monday it was decided to stop till daybreak to save the little remaining coal, in the hope that the fog would lift.

While the ship was stopped her course was worked out as far as possible, and it was decided that she must be about sixty miles from the Norwegian coast, and about ninety miles to eastward of the Shetlands. At daybreak she proceeded, steering west till noon, when she again stopped to try to fix a definite position, but without results. The Norwegian master of the trawler then declared that having very little coal left, no water, and only a hazy idea of the ship's position, he refused to accept any responsibility for her safety, if Lieutenant Canner continued to steer west. He considered that by steering east the coast of Norway must eventually be sighted, or if the ship were on the west side of the Shet-

lands, those islands would be seen. The master proposed to sign a written document to the effect that every effort had been made to go to Lerwick, but that for humanity's sake it was necessary to proceed on an easterly course to Norway.

As the crew were already suffering from thirst, the ship's company were assembled and the position explained to them. They were of opinion that by steering west the vessel would possibly go farther out into the Atlantic Ocean, and apart from the fact that everything available had been burnt (they were already burning empty barrels), they were not at all unlikely to die of thirst. The master and crew finally decided to leave everything in the British officer's hands.

Lieutenant Canner, though of opinion by the soundings that the vessel was east of the Shetlands, fully realised his risk and responsibility in steering west, but determined that the ship should not go to Norway, and continued on a westward course. At 2 a.m. on Tuesday (15th) he considered that they ought to be close to land and steamed dead slow, steering south-west to stem the ebb-tide, and waiting for daylight. At 6 a.m. he proceeded west again, still in a dense fog. The suspense of the moment, with no knowledge of what the lifting of the fog might reveal, with the last coals burning, and nothing to drink, must have been intense. At 8.30 a.m. land was sighted about 200 yards on the port bow, and was found to be Helli Ness, close to Mousa Island south-east of the Shetlands. From that position the ship steered for Lerwick and arrived there about 10 a.m.

With characteristic brevity, Lieutenant Canner finished his letter to the Admiral, "There is nothing further to report," but the Admiral noted that he "deserved credit" for the manner in which he had brought the ship into port.

Another officer from the *Hilary*, Lieutenant S. B. Groome, R.N.R., had a somewhat similar experience, when in charge of an armed guard ordered to bring the steam trawler *Assistant*, with a cargo of herrings, into Kirkwall. He boarded the trawler south-west of Iceland, on August 8th, and was greeted by the tidings that the captain had not enough coal, provisions, or water on board to take his ship to Kirkwall, as he was supposed to reach

Lodmunder Fiord, Iceland, the next day. The coal was enough at easy speed, and the *Hilary* supplied sufficient water and food. As usual, there were no instruments or navigational books of any description on board, and on August 9th the patent log was lost. The weather was fortunately fine and clear, and on August 10th a course was set for Fuglo Island, Faeroes. By 6 p.m. no land had been sighted, and a very thick fog came on. The captain then said he could no longer navigate his vessel, and asked Lieutenant Groome to take charge, but he refused to accept any responsibility, though willing to help. Eventually he undertook the navigation, and set a course S. 16° E. (mag.), hoping to make Fair Island. The captain of the trawler had no idea as to how far out his compass was. On August 12th, at 6 p.m., land was sighted about a quarter of a mile ahead, but there was still a thick fog, and by the lie of the land it was concluded that they were off Burrier Head, Shetlands. As the weather cleared, Lieutenant Groome set a course south and sighted two lights, but at midnight was again uncertain, and set a course S.W. $\frac{1}{4}$ S. for Fair Island. At 1 p.m. a very thick fog came up with a strong wind and heavy sea; the vessel rolled heavily and shipped much water, and most of the herrings were washed overboard.

At 4 a.m. on August 13th the fog was too thick to sight Fair Island, and after several hours of great doubt as to his position, and some anxiety because the fresh water on board had come to an end, he picked up the Kirkwall pilot boat at 1.50 p.m. and anchored in Kirkwall harbour at 2.30 p.m. The Admiralty commended both these officers, and further considered the wisdom of risking armed guards in such ill-found small craft.

On September 22nd the newly fitted ship *Avenger* joined the 10th Cruiser Squadron. A week later the *Almanzora* returned from Liverpool and was ordered to join the "E" Patrol, which was still sending in more suspected vessels than any of the other patrols. Submarines were still active. On September 26th two ships of the Auxiliary Patrol, the yacht *Conqueror II* and the patrol trawler *Sarah Alice*, with five British steamers, were torpedoed in or near the Fair Island Channel by enemy submarines. Four days later the Admiralty oiler *Califol* was attacked by a submarine in 59° 48' N., 5° 5' W.,

and two armed trawlers which were patrolling near the Faeroes were sent to her assistance. It was, however, soon reported that destroyers were on their way to the *Califol* and that she had evaded the submarine; the orders to the trawlers were countermanded. Patrols were also warned on October 1st that a submarine had been seen in 60° N., 4° 20' W., at 1 p.m. on September 30th. It was stated that she was in company with a cargo steamer of about 2,000 tons, with the word *Holland* painted on her side. Special precautions were taken in case the vessels were acting in company.

As the herring fishing season was at an end, and fewer ships were met, proceeding from Iceland to Scandinavian ports, the "E" Patrol was reduced to two ships in the first week of October.

Although there had been many reports of submarines in the area patrolled by the 10th Cruiser Squadron, on October 8th the lines were again moved eastward by order of the Commander-in-Chief of the Grand Fleet. Nevertheless, during the week ending October 8th, 105 vessels were intercepted, and twenty-six sent in with armed guards. A large number of these ships were bound for Archangel, many of them carrying arms and munitions for Russia. Some of the ships complained of the bad quality of the coal supplied to them, which in many cases considerably reduced their speed—a serious matter, with submarines on the route.

On October 9th the *Alsatian* intercepted the Norwegian steamer *Hercules*, from New York to Archangel, with a cargo of oil, copper, railway materials, etc. The master stated that, if he were unable to pass Vardo Island by October 15th, he was permitted to discharge his cargo in Norway. Apparently this was what he intended to do, as he was heading for Norway, and said he could not reach Vardo by the date given. The Admiral, who had his flag in the *Alsatian*, had information that it was undesirable to let more copper go to Norway, and as he did not feel confidence in the master of the *Hercules*, the ship was sent to Lerwick with an armed guard. She was manned entirely by Chinese, with Norwegian officers.

On the 18th, as numerous submarines were reported north of the Shetlands the lines were again shifted—further evidence of the continually changing conditions

to which Admiral Tupper was exposed in carrying out his difficult task.

The weather was again very stormy in the middle of October, and though officers and men were inured to the dangers of sea, fog, and wind, boarding became impossible, so that ships were obliged to accompany vessels in which it was desired to place armed guards until the weather moderated. Occasionally a warning was received that a submarine was probably lying in wait for some particular ship, generally a munition carrier. During the month the 10th Cruiser Squadron was directed to look out for the Rumanian steamer *Jiul*, which was thus threatened, but in spite of their precautions she was not sighted.

On October 27th the *Kildonan Castle*, a new armed merchant cruiser that had lately joined the squadron and was patrolling in $63^{\circ} 13' \text{ N.}$, $18^{\circ} 30' \text{ W.}$, was attacked by a submarine. Two torpedoes were fired at her almost simultaneously at a range of between 600 and 1,000 yards. Both fortunately missed, and the *Kildonan Castle* was put at full speed. There was no time to open fire, as the periscope was not seen till after the wake of the torpedoes had been sighted, and the submarine was then diving. The *Kildonan Castle* was carrying out rifle practice at the time in accordance with the routine enforced on all ships.

The "A" Patrol was immediately moved north-west and two armed trawlers, which were on their way to patrol between St. Kilda and Rockall, were sent to search for the submarine. It was thought that she was out to intercept Archangel traffic, or was possibly scouting round Iceland to see if the patrols there would prevent a raider from getting through. On October 28th the *Avenger* sighted a submarine still further north ($66^{\circ} 16' \text{ N.}$, $26^{\circ} 30' \text{ W.}$). It was just possible that this was the same vessel. There were other reports at the time, and the patrols were shifted each day about sixty miles, either east or west, on a different angle, in the hope of confusing the submarines.

Just at this period (late in 1916) the political situation was such that the Germans wished to avoid "complications" in the war zone round England. They were to make peace proposals in December, and meanwhile restricted their submarine attacks on commerce to the Mediterranean, and, in northern waters, to attempts to sink supplies sent via Archangel to the Russian seat of war.

The Admiral of the 10th Cruiser Squadron in November again asked for more Auxiliary Patrol vessels to be attached to the squadron, as numbers of his ships were working off the coast of Iceland and there were British fishing trawlers in those waters. In addition, the Faeroes might require watching, and other positions would be more usefully patrolled by smaller anti-submarine craft. From October 30th to November 2nd reports had been received of submarine activity between Muckle Flugga and the Flannan Islands, and the outlook was bad.

The Admiralty did not consider that an extra trawler patrol was yet required for duty off Iceland, though it was recognised that, owing to the fact that the blockading squadron had to keep well to the westward because of the submarine menace, there was a likelihood that neutral vessels might slip through to the eastward. The Stornoway trawlers patrolled to about the 100-fathom line (off the Hebrides), but vessels might pass between them and the squadron, and it was suggested that four trawlers from the Orkneys might be usefully employed there. On the 11th the Vice-Admiral, Orkneys and Shetlands, was directed to send them to Oban for service with the 10th Cruiser Squadron.

The weather during the second week of November was so bad as practically to prevent boarding. Only seventeen vessels were intercepted and examined during the week, and five were sent in with armed guards. At this time, moreover, eight ships of the squadron were at Liverpool or in the Clyde for refit.

On November 18th the *Otway* boarded a German prize, the Norwegian s.s. *Older*, which had been captured by a German submarine on November 13th in $47^{\circ} 8' \text{ N.}, 9^{\circ} 6' \text{ W.}$ The commanding officer of the *Older* was unable to prevent the German prize crew (a lieutenant, a warrant officer, and seven men) from exploding bombs and opening cocks to sink the ship, when the *Otway* took off the crew. The *Otway* also took off the nine Germans, and the crews of the two other ships sunk by the submarine (eight of the British steam trawler *Hatsuse*, sunk on November 14th 86 miles S.W. from the Fastnet, and twenty-five of the crew of the Italian steamship *Lela*, which had been sunk on November 13th. It was discovered that the submarine had been in company with the *Older* up to the

previous evening (17th) and they were both said to be bound for Kiel. A general warning was issued to the 10th Cruiser Squadron. Telefunken signals had been intercepted on the 17th at 6.28 a.m. and 9.59 p.m., which were probably sent by the submarine.

The next day (19th), as it was found that the *Older* was not much damaged, Italian and British crews were put on board, and at 1.15 p.m. she was despatched to Stornoway with an armed guard from the *Otway*, and arrived on the 22nd.

Delays in the refitting of ships were causing a shortage in the number of vessels on patrol; this embarrassed the Admiral of the squadron, and also upset the relief programme, and kept ships on duty beyond the normal fifty days, which was "bad for their boilers"; the Admiral might also have added that the too prolonged strain on the crews tried their endurance to breaking point. On December 1st Admiral Tupper reported that, as the boiler-makers refused to work overtime on board the *Orcoma*, her sailing would be delayed. The *Kildonan Castle* was also away on special service.¹ Only thirteen ships were at sea at the beginning of December (out of the total of twenty-four) instead of seventeen, as there should have been.

On December 2nd in about 59° 56' N., 11° W., the *Avenger* and the *Teutonic* both intercepted a vessel which was thought to be the Dutch ship *Gamma*, and she was allowed to proceed on her way. It was afterwards suspected that the ship was a raider and not the *Gamma*, and a Court of Enquiry was held on board the *ORION* on December 18th, with Rear-Admiral Goodenough as President. The Court found that the ship was not the *Gamma*, as she represented, but there was some confusion about her calling at Kirkwall, as according to the latest orders Dutch ships did not go to Kirkwall, and the officers of the examining ships were justified in allowing her to go on. It was concluded that she was a supply ship and not a raider. The real Dutch *Gamma* apparently cleared at Kirkwall on December 3rd, and the report of this clearance first raised the question about the ship examined on the 2nd.

The weather continued to be bad throughout November, and it was probably owing to that fact, as well as to the

¹ She rejoined the squadron on December 25th.

shortage of blockading cruisers, that two German raiders, the *Möwe* and the *Wolf*, got through to the Atlantic at the end of the month.¹ On December 8th the Admiral received orders to detach four ships of the squadron to pursue the raiders. As it was necessary for these vessels to have a large radius of action and to be suitable for the tropics, the *Almanzora*, *Orvieta*, *Orcoma*, and *Arlanza* were selected for the purpose. The first three were already at Liverpool, and the *Arlanza* was ordered to join them there at once. She had only lately returned to the squadron after her adventures in the White Sea. Later in the day the *Gloucestershire* was also sent to the Clyde, presumably to replace one of the other vessels, which might not be ready in time.

Owing to the shortage of ships, the "E" Patrol (off Iceland) was temporarily given up, and the *Otway* and *Moldavia* joined the main patrol line, which was altered on the 9th, owing to further submarine alarms; but on the 11th the Admiral heard from the Commander-in-Chief of the Grand Fleet that a German raider was possibly coming out via the north of Iceland or the Faeroes, and he directed that a ship should go back to the "E" Patrol, and that the more northern Patrols ("A" and "B") should be strengthened at the expense of the more southern ("C" and "D"). Eight ships only were available, and that number was obtained by countermanding the order for the *Avenger* to oil, and by directing that the *Ebro* should remain out for two or three days longer, though she was already overdue for overhaul and coaling. A force of light cruisers was detached from the Grand Fleet to search for the raiders further south, and as the 2nd Light Cruiser Squadron took up the patrol on a line joining Sydero and Noup Head, the "C" Patrol was reduced to two ships, and the four ships of the "A" and "B" Patrols were ordered to work on a line 360° from 61° 30' N., 9° W. This was all that could be done by the 10th Cruiser Squadron towards stopping a raider on her way north of the Faeroes for Icelandic territorial waters.

¹ The *Möwe* was out in the Atlantic for four months, captured and sank a considerable number of ships (the Germans claimed twenty-seven) and returned to her base on March 22nd, 1917. The *Wolf* was out longer, the sphere of her activities being chiefly the Indian Ocean. She returned to Kiel on February 19th, 1918, without meeting any British forces.

Two armed trawlers were directed to patrol between St. Kilda (Hebrides) and 10° W. with the idea of working across the route followed by Dutch vessels between Holland and Falmouth. The route followed by those vessels generally carried them clear of the 10th Cruiser Squadron patrols, and it was known that, if the enemy knew this fact, he would have a key to a comparatively safe passage through the patrols. The Admiral intended to use the trawlers attached to his squadron to block the passage as far as possible, but suggested that Dutch vessels should be ordered to pass west and north of Rockall from the position 61° N., 6° W. This would generally ensure that they would be intercepted, and give the impression that the whole area was thoroughly patrolled. At 7 p.m. on December 14th the Commander-in-Chief of the Grand Fleet informed Admiral Tupper that no further news had been received about the supposed raider, and that ordinary patrol should be resumed. The fact that the *Möwe* and *Wolf* had both got out was not known at this time.

On the 15th there was a further alarm of a suspicious vessel sighted off Muckle Flugga, and the "C" Patrol was moved to the eastward to intercept her, but she proved to be the MINOTAUR. Another alteration was made in the patrol on December 19th in order to watch more effectively the passage between the Faeroes and Iceland, but the shortage of ships still caused considerable difficulty.

During December both the *Moldavia* and *Hildebrand* revealed structural weaknesses which would keep them in dock until the middle of January, so that the squadron had to work with a shortage of vessels, though the blockade continued to provide varied tasks, which put a great strain on the Admiral's resources. On December 29th the *Kildonan Castle*, *Ebro*, and *Changuinola* were directed to chase a large four-masted steamer which the armed trawler *Arley* had been unable to stop (in $58^{\circ} 10'$ N., $9^{\circ} 10'$ W.). The *Arley* had fired blank charges at her, but without effect, and could not overhaul her as her speed was 14 knots. She was said to be a Danish motor-ship, the *Panama*, which had cleared from Stornoway the day before. The three cruisers were, however, unable to find her, and returned to patrol in the evening.

On December 31st the Admiral, in the *Alsatian*, visited Scapa Flow, to discuss with the Commander-in-Chief of the

Grand Fleet (Sir David Beatty) various matters in connection with the squadron, especially the possibility of using Scapa instead of Swarbacks Minn as a coaling base, or the alternative of abandoning a northern base and using Liverpool and the Clyde only. The visit to Scapa was greatly appreciated by both officers and crew of the *Alsatian*, especially the opportunity of seeing the Grand Fleet and realising more fully that the 10th Cruiser Squadron actually belonged to it.

The constant alarm as to German surface raiders seems to have affected very considerably the dispositions of the 10th Cruiser Squadron during 1916. As early as February the Commander-in-Chief of the Grand Fleet had suggested to the Admiral commanding the squadron that it might be advisable to alter the patrols in view of the possibility that more disguised and armed merchant ships might be coming out.¹ The menace, he said, would probably necessitate a cruiser squadron being kept north of the Shetlands, and, when the weather permitted, a freer use of destroyers and constant cruiser sweeps towards the Skagerrak. The Commander-in-Chief's idea was that, on the alarm being raised, the 10th Cruiser Squadron should at once take up a position from Muckle Flugga to Utvaer Lighthouse, whence they would sweep south.

All the Admirals in the Grand Fleet were directed to send in proposals for meeting the difficulties which had become apparent in maintaining the patrol. Sir Cecil Burney (First Battle Squadron) pointed out that efficient patrols between the Shetlands and Iceland, and in the fairway north of Iceland would mean establishing a blockade on a front of 410 miles (without counting the Northern Channel), and that would mean at least 40 ships constantly on patrol, and approximately 60 ships to maintain it. The total number of ships in the 10th Cruiser Squadron at the time was 27, of which 17 were actually away, leaving only 10 on patrol, instead of 40. It is hardly surprising, therefore, that raiders did get through. Admiral Burney suggested employing the four cruiser squadrons of the Grand Fleet as well as more submarines in order to render the blockade more adequate.

The Rear-Admiral commanding the First Battle Cruiser Squadron put forward two plans, one to fix routes for all

¹ The *Möwe*, on her first cruise, came out at the end of December 1915.

outward-bound neutral traffic passing north of the British Isles, and the other for the neutral Powers to establish a convoy system for outward-bound ships from Slotterø Light to Sumburgh Head, 180 miles. Either of these measures, he urged, would reduce the area to be covered by the patrolling vessels, though neutral Powers would no doubt object. It was obvious that these two suggestions covered the whole field: increase the blockading squadron, or decrease the area the squadron had to cover; but neither was adopted. Sir David Beatty's letter on the subject dealt chiefly with the danger to men of war and squadrons at sea when passing within two miles of a merchant vessel, unless she had been carefully inspected.

New instructions were subsequently issued for boarding vessels and making signals. Ships of the 10th Cruiser Squadron were directed not to board suspected vessels unless a consort was within supporting distance.

A curious incident occurred on July 26th. The Wilson liner *Eskimo*, from Christiania to Newcastle, was captured by a German auxiliary cruiser off Risør, on the coast of Norway, and taken to Germany. The captain considered that he was, according to custom, within territorial waters, which were deep right up to the coast in this position. The German ship fired five shots, and the second shot hit the *Eskimo*. The Berlin official communiqué of July 28th spoke of an "engagement" with the armed British steamer *Eskimo*; but the ship was not armed. She carried two rifles and a small amount of ammunition for them, all in charge of the master.

This event only affected the 10th Cruiser Squadron in so far that the capture was effected either in territorial waters or very close to them. Attempts of the same kind had apparently been made before, and if territorial waters were to be even more closely watched it would add very considerably to other difficulties.

In October 1916 further instructions were issued for action to be taken to intercept enemy raiders which were reported as being about to sail, or as having sailed, from an enemy port, with the intention of breaking out into the Atlantic. These instructions were chiefly for the 2nd Cruiser Squadron and armed boarding steamers on the Shetland-Faeroes patrol and the 4th Light Cruiser

Squadron and destroyers on the Shetland-Norway patrol. The 10th Cruiser Squadron had their own orders for a line approximately between Rockall and Iceland, and while disposed to intercept raiders, were to intercept and send in merchant vessels as usual. If ice permitted, two ships were to be detailed to patrol in the Denmark Strait, and one off the south-east coast of Iceland. In spite of all these precautions, two enemy raiders escaped into the Atlantic. The *Möwe* and *Wolf* left Germany towards the end of November, and on December 15th the Commander-in-Chief of the Grand Fleet wrote strongly to urge that more drastic measures should be taken, especially with regard to control over Norwegian territorial waters, in which enemy vessels and neutral vessels carrying contraband passed freely up and down without fear of molestation.

As an illustration of the correctness of his apprehensions, it may be noted that the raider *Seeadler*, which was formerly the American sailing ship *Pass of Balmaha*, left Bremen on December 21st, 1916, for the coast of South America, evaded the patrols, and got through without being seen.

On December 17th a new memorandum was issued by the Commander-in-Chief, Sir David Beatty, as to action to be taken on receipt of information that an enemy commerce raider was about to sail or had sailed from an enemy port. Later in the month he represented very strongly to the Admiralty that the recent reduction in numbers of the blockade squadron weakened the general efficiency of the patrol, as the force was inadequate for guarding in a reliable manner the passages north of Iceland, between Iceland and the Faeroes, and between the Faeroes and Orkneys. This was especially serious with regard to the passing out of raiders, as well as for keeping a strict blockade. The only enemy surface vessels which could operate against trade on the high seas were those which evaded the 10th Cruiser Squadron patrol, and all the oversea supplies for countries bordering on Germany had to run the gauntlet of the blockading squadron. It was, therefore, in his opinion, absolutely imperative that their numbers should be increased. With four of the best ships absent hunting a raider in the Atlantic, the *Kildonan Castle* about to be withdrawn for special service, the *Armada Castle* not yet joined, the *Artois* and *Champagne*

not reliable, and about a third of the remainder coaling or refitting, there were usually only 12 or 15 vessels on patrol. The Commander-in-Chief suggested that five ships (armed merchant cruisers) should be withdrawn from the Atlantic trade routes, three others from South America, one from East Africa, and one from China, to strengthen the 10th Cruiser Squadron. He also urged that vessels from the 2nd Cruiser Squadron might be sent to South America, and the other ships replaced by French and Japanese vessels. He recommended that a permanent patrol of about 24 vessels ought to be kept by the 10th Cruiser Squadron. The Admiralty answer to this was that the squadrons abroad had not only patrol work to carry out; they had to prevent the escape of enemy interned vessels, to escort transports, and to carry gold to the United States.

During 1916, 3,388 vessels were intercepted, and 889 were sent in with armed guards. In 1915 the numbers had been 3,098 and 743 respectively, and the increase was probably due to the large number of vessels intercepted off the north-east coast of Iceland during the herring fishing season, as owing to the submarine menace the patrols were frequently so far to the westward that they were in a less favourable position for intercepting shipping than in 1915. Whether the enemy realised this fact is not known. Only one ship of the squadron was lost during 1916, the *Alcantara*,¹ in action with the German raider *Greif*, but an officer and five men belonging to the *Ebro* were lost in the Norwegian barque *Olivia* which had been sent in under armed guard, and was never heard of again. An officer and a leading seaman were also removed by a German submarine from the Norwegian barque *Pestalozzi* and taken to Germany as prisoners of war.

The work of the squadron was considerably affected by the extension of blockade measures, without any corresponding increase in the number of the blockading vessels. The increased submarine menace also added to the difficulties, as it was always driving the patrol to the westward, and thus leaving an unguarded channel for merchant ships to get through without undergoing examination, and the recurring alarms about surface raiders very often took the squadron away from its own pressing duties.

¹ See Vol. II., p. 154.

In spite of all these dangers and drawbacks, the work was unceasingly carried on, and the blockade developed successfully. Though three enemy raiders evaded the patrols and got through into the Atlantic and Indian Oceans in 1916-17, two others were sunk, and the Germans must have realised very well that the odds were greatly against them, as they did not tempt fortune by risking many more ships as oversea raiders.¹

The position of the 10th Cruiser Squadron after four of the best ships had been sent away to the Atlantic in December 1916 was very precarious, but this was recognised by the Commander-in-Chief of the Grand Fleet, and at the Admiralty, and the cruisers and light cruisers of the Grand Fleet were increasingly employed in blockade and patrol work.

¹ For operations of the German raiders, see Vol. II., Chap. XVII.

CHAPTER IV

THE DEFENSIVE ARMING OF MERCHANT SHIPS

IN the previous volume of this history a special chapter entitled "The Merchant Service on the Defensive" was devoted to the measures taken by the Admiralty up to the middle of the year 1916 to arm the British Merchant Service for self-protection. We must now describe the steps which were taken, in view of later developments of German policy, to defend the Allied cause. That the enemy tactics were defeated was due partly to the success of the British navy in sinking submarines, and otherwise protecting merchant shipping against their depredations, partly to the arming of British merchant ships and the training of their crews to defend themselves, their ships, and their cargoes. With the first-mentioned methods (described in the volumes on "Naval Operations") this history does not deal. It treats of an equally or even more inspiring theme, the armament of the merchant ships and the training in discipline and in fighting efficiency of the personnel. The German policy nearly succeeded. That it failed is largely due to the enthusiasm with which all ranks under the Red Ensign, men and youths, from captain to cabin-boy, rose to the occasion. The subject comes naturally under two heads: (1) the supply of armament to British merchant ships, and (2) the training of the crews in its use. This chapter deals with the first portion of the subject.

Before describing in detail the measures taken by Great Britain to arm merchant ships on an extensive scale, it is desirable to complete the tale of the attitude of neutrals towards the policy involved. The special conditions which affected the territorial waters of different countries may be gathered from a memorandum drawn up by the Admiralty in 1916 and issued in its final form on March 1st, 1917. Under the terms of this memorandum, the Merchant Service was informed that defensively armed vessels might visit the ports of any neutral country (except Holland) to

which they were permitted to proceed under the conditions affecting voyages recognised as permissible under the Government war risk scheme. Special instructions for masters of ships as a guide to their procedure in ports of the United States, Spain, Cuba, and Norway were appended. To obtain clearance from a port in the United States (including those in the Panama Canal zone) an assurance to the local authorities, from the British consular office, was required to the effect that the armament would be used only for defensive purposes, and the masters were warned that they must also expect to have to answer certain questions. If any difficulty arose, appeal to the nearest British consular officer was recommended. On a defensively armed vessel visiting a Spanish port, the captain, proprietor, or agent of the vessel was directed to furnish a written declaration, with the intervention of the British consular officer (if any):

1. That the vessel was destined exclusively for commerce.
2. That she would not be transformed into a ship of war or auxiliary cruiser before returning to the United Kingdom.
3. That the armament on board would only be used for defence of the vessel in case of attack.

Instructions affecting visits to ports in Cuba were less definite. On arrival at a Cuban port of "an armed ship of belligerent nationality, purporting to be a merchant vessel" the port authorities immediately conducted an investigation as to the proposed employment of the armament, and reported to the State Department whether there was sufficient proof to negative the presumption that she was, and should be treated as, a war vessel. In Norwegian ports the masters of ships were required to furnish the commanders of the local guardships with details of their ships' speed, dimensions, armament; their last, present, and proposed voyage; the number and nationality of officers and crew, and so forth. In case of difficulties in any neutral port, the masters were recommended to apply to the nearest British consular officer.

On March 13th, 1917, after the United States had broken off diplomatic relations with Germany, but had not yet declared war, the Navy Department issued Regulations for the conduct of American Armed Merchant vessels,

which are so important that they are given *in extenso* in Appendix A.

It will be seen by reference to these regulations that the American system was to place an "armed guard" on board each vessel, instead of training their Mercantile Marine as a combatant service to protect themselves, as in the British service. These armed guards were for the sole purpose of defence "against the unlawful acts of Germany or of any nation following the policy announced by Germany in her note of January 31st, 1917." Neither the armed guards nor their arms were to be used for any other purpose than that specified. The armed guards, in matters of a non-military character, were under the orders of the master of the vessel, but their military discipline was administered by the naval officer commanding them, who was alone responsible for opening or ceasing fire. As in the British service, national colours were to be hoisted before fire was opened. It was laid down as lawful for fire to be opened upon any submarine of Germany, or of any nation following her policy of January 31st 1917, that attempted to approach, or lay within 4,000 yards of the commercial route of an American vessel sighting the submarine in the zone prescribed by Germany. Fire was also to be opened at ranges exceeding 4,000 yards upon any submarine which fired first.

Offensive action was not permitted outside the zone against submarines so specified, if on the surface, unless guilty of an unlawful act jeopardising the vessel concerned. Fire could be opened upon submerged submarines outside the zone. Although not called upon actually to serve the gun, the merchant crews were required to handle ammunition, clear the decks, and otherwise to perform supplementary service in fighting the ship. The precedence of the naval officer was defined as coming next after the master, with the proviso that he was not eligible to succeed to the command of the ship. He was responsible for the condition of the guns and of their appurtenances; for training not only the armed guard, but also the members of the crew detailed, as above, to assist in the service of the guns; for the readiness of the armed guard; for a continuous look-out near each gun; and for reporting to the Navy Department.

Such was the policy of neutrals, and of the United

States when about to become a belligerent, during the acute stage of the German unrestricted submarine campaign which was launched in February 1917. In British merchant ships, guns, almost without exception, were placed right aft from the outset. A certain amount of agitation for a gun forward was raised from time to time, mostly by masters who had not had an opportunity for studying thoroughly the arguments for and against this procedure. The primary duty of a merchant ship was to bring her cargo safely to its destination, and not to engage in action with the enemy if that course could be avoided. That policy was originally laid down in pre-war days, when its initiation was under the guidance of Admiral H. H. Campbell. It was summarised in his reply to masters of meat-ships who wanted their guns mounted forward: "We want the beef that you are carrying." That principle having been established, it was clearly desirable that, on sighting a submarine, a merchant ship should turn her stern towards it and run. To mount the guns aft was obviously the most effective policy under such conditions. Two alternatives were suggested to captains of merchant ships for their procedure in the rare event of their sighting submarines ahead, when it might be urged that, whilst endeavouring to turn the stern towards the enemy, the whole broadside would be exposed, offering an easy and vulnerable target. If a submarine, sighted in such a direction, was so close as to be within effective torpedo range if the ship turned, masters were told to endeavour to ram; if outside torpedo range, to turn and so to bring their guns to bear as quickly as possible. These after-guns, they were reminded, had an arc of fire which enabled them to be trained upon a target well before the beam. Apart from the desirability of taking to flight in order to save the cargo, three great objections to mounting the guns forward were indicated. So mounted they would be constantly under water if there should be any sea running, they would be on a very unstable platform, and, unless the submarine fled from the merchant ship (an unlikely occurrence), the rate of change of range would be so rapid as to render accurate firing almost impossible. It is noteworthy that the French and Americans, who first mounted guns in both positions, soon adopted the British practice of mounting them all aft.

The official notice issued in 1918 by the French Anti-Submarine Division describes very lucidly the opinions already arrived at in Great Britain. The tactical rules were explained in that notice to be purely defensive, and based upon experience in the merchant ships of all the Allies. They can be summarised briefly in tabular form:

TACTICAL RULES FOR MERCHANT SHIPPING

Case.	Submarine Sighted.	Instructions.
A.	On the surface	Turn stern on, putting engines to full speed.
B.	Submerged { C. Far off D. Close, and less than 70° off the bow E. Close, and more than 70° off the bow	Manœuvre as above. Try to ram at full speed. Turn stern on, putting engines to full speed.

Aft is obviously the most effective position for guns in cases A, C, and E. Even in case D, a *gun* would not be of much use; a short range bomb-throwing *mortar* would be far more useful.

A warning was issued in the same document that the possession of a gun mounted forward was likely to lead a merchant ship into adopting extremely dangerous tactics of approach. A definite example was given, in order to illustrate this point. The steamer *Amiral de Kersaint*, carrying two guns, one in the bow and the other in the stern, had her stern gun damaged by gunfire. Attempting to "make a show with her bow gun" she was sunk by gunfire. Had she continued to run away, she would probably have escaped, and so fulfilled her mission.

It will be seen from the foregoing notes that the British policy of arming merchant shipping was a purely defensive one, that its defensive nature was proved to, and ultimately accepted by all neutrals, and that the system of mounting guns in the stern, as the most effective position in pursuance of a defensive policy, was adopted both by Great Britain and also by Allied countries.

Lord Jellicoe, who joined the Admiralty as First Sea Lord in December 1916, writes¹ that during the period

¹ *The Crisis of the Naval War*, p. 7.

immediately preceding the unrestricted submarine campaign large numbers of merchant ships were being sunk by gunfire, and consequently one of the most pressing needs was a great increase in the number of guns supplied to defensively armed merchant vessels. The First Lord (Sir Edward Carson), he tells us, fully realised the urgent necessities of the case, and was constant in his efforts to procure the necessary guns. The following figures, gathered from the statistics for the year 1916 and the first twenty-five days of 1917, are of special interest in this connection :

EFFECTS OF DEFENSIVE ARMAMENT
January 1st, 1916, to January 25th, 1917

	Sunk.			Escaped.	Total Attacked.
	By Torpedo without Warning.	By Gunfire, Bombs, etc.	Total.		
Defensively Armed	62	12	74	236	310
Unarmed . . .	30	205	235	67	302
Total . . .	92	217	309	303	612

Under such conditions, it is not surprising that the value of a gun became so obvious that the masters of British vessels sailing from neutral ports often mounted dummy guns in conspicuous places, either specially constructed guns made of wood, or stove-pipes, or anything which gave the right appearance. The example of the *Nicosian*, in the early days, can be quoted as typical. Her commander erected a dummy wooden gun on the wheel-house aft, and improved its appearance as the result of suggestions made by a military passenger. A submarine, which approached the *Nicosian*, at first sheered off, keeping out of gun-range for half an hour before coming closer and attacking her with gunfire. This half-hour enabled another friendly vessel to approach, and the *Nicosian* was saved.

The years 1917 and 1918, following upon the intensive and ruthless U-boat campaign initiated early in 1917, marked progressive activity in the armament of British merchant shipping. In the previous volume of this history it was shown that on September 18th, 1916, the number of

defensively armed British vessels afloat had reached 1,749. The rapid development, as more guns became available, can be gathered from the following figures :

Date.	1917	Defensively armed ships afloat.
February 22nd		2,899
May 15th .		3,253
August 9th .		3,440
December 29th		3,656
	1918	
April 13th .		3,857
August 10th .		4,162
November 2nd		4,203

The only ports in the United Kingdom in which the work of arming merchant shipping was carried out early in the war were the Mersey and the Thames. As the menace to merchant shipping developed, this work had to be extended to many other places, both in the United Kingdom and overseas, as shown in the table on page 113, which gives a good idea of the magnitude of the operations. A staff of 91 officers and 441 others, total 532, was ultimately required to undertake the work involved.

Taking guns and howitzers together, it will be noted that they were mounted over 17,000 times and dismounted about 11,000 times by the shore staff. Much of this mounting and dismounting was due to the shortage of supplies of guns, necessitating the armament of vessels only while they were in the most dangerous areas. A contributory cause was the necessity of the replacement of smaller guns by larger ones as the armament of German submarines became more formidable.

Reference has been made to the moral effect upon submarines of displaying the armament of merchant ships. The instructions issued by the Trade Division of the Admiralty on October 20th, 1915, contained the following clause, which indicates the punctilious care taken by the Admiralty to counter any charge that might be made against British merchant shipping for posing as neutrals :

“ It should be remembered that the flag is no guide to nationality. German submarines and armed merchant vessels have frequently employed British, Allied, or neutral colours in order to approach undetected. Though, however, the use of disguise and false colours in order to

Ports.	Ships fitted or refitted for		No. of times on which guns were		No. of times on which Howitzers were	
	Guns.	Howitzers.	Mounted.	Dis-mounted.	Mounted.	Dis-mounted.
<i>United Kingdom :</i>						
Mersey . . .	1,094	130	3,078	2,178	123	10
Tyne . . .	820	112	1,208	463	97	16
Thames . . .	788	205	1,834	1,322	254	14
Cardiff . . .	654	56	985	419	30	4
Clyde . . .	535	118	759	375	117	8
Barry . . .	363	27	543	236	28	4
Humber . . .	333	78	532	282	40	2
N.E. Ireland . .	182	39	245	112	51	6
Tees . . .	226	62	329	169	24	4
Newport (Mon.) .	168	18	214	92	14	—
Swansea . . .	164	8	202	43	4	—
Southampton & Portsmouth .	159	19	252	122	28	12
Avonmouth . . .	133	15	224	120	13	1
Manchester . . .	15	5	30	20	—	—
Devonport . . .	60	6	110	66	16	—
Forth . . .	96	7	119	54	12	1
<i>Overseas :</i>						
Gibraltar . . .	368	—	968	818	2	—
Egypt . . .	327	—	2,083	2,016	3	—
India . . .	125	—	17	9	—	2
Canada . . .	101	—	277	111	—	—
S. Africa . . .	100	—	469	326	—	—
Malta . . .	60	—	72	34	—	—
U.S.A. . .	36	—	134	91	—	—
Jamaica & Bermuda . . .	22	—	224	160	—	—
Marseilles . . .	21	—	33	27	—	—
Mudros . . .	95	—	126	48	—	—
Australasia . . .	78	—	64	1	—	—
Dakar . . .	13	—	816	785	2	—
Sierra Leone . .	5	—	88	61	—	—
Miscellaneous . .	264	—	499	355	2	4
Totals . . .	7,405	905	16,534	10,915	860	88

escape capture is a legitimate *ruse de guerre*, its adoption by defensively armed merchant ships might easily lead to misconception. Such vessels, therefore, are forbidden to adopt any form of disguise which might cause them to be mistaken for neutral ships."

The screening of guns was forbidden until December 1916. On January 1st, 1917, this policy was reversed, in view of the announced intention of the German Admiralty to direct submarines to sink at sight all defensively armed vessels. Officers in charge of defensive armaments were then told by the Admiralty :

(a) That the arrangement of guns should be such that they would be as far as possible hidden from view until the moment for opening fire.

(b) That when guns were mounted on a deckhouse, a screen should be fitted, appearing to submarines like a part of the house, or, if this should not be practicable, that the guns should be kept trained athwartships and a cover fitted appearing from off the beam like a deck fixture.

(c) That where guns were mounted on the upper deck abreast of a deck-house, a gun-cover of exactly the same colour as the deck-house itself would probably suffice as a screen.

(d) That the screens should be removable, and the masters instructed to uncover the guns on going into British, Allied, or neutral harbours.

The system of screening remained in force until September 25th, 1917, by which date the vast majority of vessels in the danger zone were armed, and, since the enemy almost invariably torpedoed at sight, it was essential that the guns should be always ready for immediate action, without the loss of even a few seconds in lowering the screens. From that date only permanent weather-screens, on the forward side of the guns, were fitted, with a low rail or screen round the remainder of the platform as a security to the crew from falling overboard.

Besides the question of screening armament, the policy of providing some means of communication between the bridge and the guns also merits attention. There was, at first, a serious shortage of material to make adequate provision for this purpose, but the responsibility of the master for opening fire rendered something of the sort necessary. The need was met for a time by such methods as the use of hand-signals, sirens, and docking telegraphs, where fitted, but by February 1918 the situation had to some extent altered. The introduction of howitzers, of which the utility depended upon immediate action, rendered rapid delivery of orders from the bridge essential, and some simple and cheap form of direct communication was accordingly required. As the result of experiments motor-horns of the Blériot and Klaxon types were found satisfactory, and orders for 6,000 were placed in September 1918.

Both guns and howitzers have been mentioned as

having been included in defensive armament, and it will be convenient at this stage to review briefly the history of these and other weapons and fighting appurtenances supplied to the British Mercantile Marine. The term howitzer is used on land to describe pieces throwing their projectiles to great heights in the air with a view to dropping them at long ranges with great accuracy upon very small invisible targets. In practice, it is found that accuracy cannot be attained without the help of observers who report the fall of the shot so that corrections can be applied. Howitzers on land are mounted upon fixed, and, as a rule, upon carefully levelled platforms. At sea the conditions are so different that it is important to realise the distinction, and "howitzers" so mounted in merchant ships could, perhaps, be better described as bomb-throwers, in order to avoid confusion of terms. The main function of these weapons was officially described as having been to enable a vessel when steaming to drop a depth-charge upon a submarine, or to fire bombs at the spot where its periscope was last seen. Satisfactory results could only be expected at very short ranges. In May 1917 the first howitzers were becoming available for delivery. Their disposal will be dealt with in due course.

British merchant ships that were armed before the war each carried two guns of 4·7-inch calibre, mounted aft. The vessels employed on coastal voyages early in 1915 each carried one 12-pounder, but later on, when these guns were required for the armament of ships in the Mediterranean, they were replaced by small 3-pounders and 2½-pounders. In 1915 a few old guns of 6-inch calibre were supplied to merchant ships employed as troop-transports; these guns had a range of about 7,000 yards. Their projectiles, which weighed 100 lbs., were found to be too unwieldy for handling by the limited guns' crews which were available in the merchant vessels. When the need for universal armament became apparent, sufficient guns of a suitable type were not available, and weapons of various kinds were obtained from every available source. Little success attended attempts to purchase guns in neutral countries. As a result of the shortage, defensively armed merchant ships were at first armed with extraordinarily heterogeneous types of ordnance, including 6-inch, 4·7-inch, 4-inch, 18-pounder, 15-pounder, 14-

pounder, 13-pounder, 3-inch high angle, 12-pounds of 18 cwt., 12 cwt., and 8 cwt., 6-pounder Hotchkiss, 6-pounder single tube, 3-pounder Vickers, 3-pounder Hotchkiss, 90 mm. French guns, 10-pounder Russian, and 2½-pounder Japanese. The complications arising over ammunition supply and over training the personnel can be imagined. The system was obviously most undesirable, but it was the only method practicable until a sufficient supply of guns of standard types could be secured.

To compete with the earlier German submarines, guns such as the 12-pounder of 12 cwt. were fairly effective, but as the submarines developed and were more heavily armed, carrying guns up to 5.9-inch calibre, weapons with longer range and greater striking power became essential for defensive armament. By September 1917 the output of ordnance had been increased, and the Admiralty issued a table of ideal armament to owners and builders of merchant ships, recommending the basis to be adopted for strengthening newly constructed vessels to take the armament, and repeating the statement, already alluded to, that all guns would be mounted aft. The following table was appended :

IDEAL ARMAMENT
September 1917

Gross Tonnage of Vessels.	Ships' Crew.	Types of Guns.	Number of Guns.
7,000 and above	55 and over	6-inch	2
3,500 to 6,999 .	30 to 54	4.7-inch	{ 2 1
1,500 to 3,499 .	22 to 29		
400 to 1,499 .	Below 22	{ 3-inch high angle or 12-pounder of 18 cwt. }	1

Account was taken of the strength of the crew, as well as of the tonnage, as a basis for estimating the best armament, in order to make sure that there would be enough men available to complete the guns' crews required. No alteration in the way of stiffening and providing gun-seatings was made in vessels already built because, owing to shortage of steel, there was at that time no prospect of being able to provide even one gun for every vessel

for about two years, and it was very doubtful whether two guns would ever be provided for each of the larger ships. This provision was, however, always kept in view as the ultimate aim. Specially valuable vessels, such, for example, as six "leaf"-class oilers, each carried two 4·7-inch guns and ten naval ratings to man them, and it was necessary to mount two heavy guns in certain newly constructed vessels where the armament was so placed that neither gun could fire across the stern. Early in 1918, a number of light guns became available, and one of these was allowed as a supplementary armament to vessels fitted for two heavy guns but only carrying one such weapon. By September 1918, permission was granted to mount two heavy guns in every large oiler, and in all refrigerating ships carrying over 4,000 tons of meat. Sailing ships were allowed two light guns.

So matters progressed. Early in 1918 approval was given for the arming of all merchant ships of over 400 gross tons with heavy guns. It was estimated that about 50 per cent. would be suitable for carrying this type of armament. Finally, since the 6-inch gun, with its 100 lb. projectile, had not been found entirely suitable for use in merchant ships, for reasons already given, a new gun of 5·5-inch calibre, firing a projectile weighing 80 lb., was designed for the purpose. Eleven hundred of these guns were ordered, but they had not been supplied by the date of the armistice in November 1918. By that date the following table had been drawn up to show the nature of armament which was considered to be the best as the result of later experience :

IDEAL ARMAMENT
November 1918

Gross Tonnage of Vessel.	Type of Guns.	Number of Guns.
7,000 and over . .	6 or 5·5-inch	2
5,000 to 6,999 . .	5·5 or 4·7-inch	2
3,500 to 4,999 . .	4·7 or 4-inch	2
1,500 to 3,499 . .	4-inch	1
400 to 1,499 . .	4-inch where practicable, otherwise 3-inch, or 12- pounder of 12 cwt.	1 or 2
Below 400 . .	3-inch, or 12-pounder of 12 cwt.	1 or 2

It will be seen from the above that whereas, at first, guns as small as $2\frac{1}{2}$ -pounders were supplied to defensively armed merchant ships, by the conclusion of the war, as the types of enemy submarines were developed, it was not thought to be worth while to supply guns smaller than the 12-pounder of 12 cwt. Of 2,987 new guns mounted during the year 1917, only 190 had been smaller than 12-pounders.

Before passing to the supply to merchant ships of weapons other than the gun, it is desirable to take note of difficulties encountered over systems of electrical firing and night sights, of types supplied to the navy. These, so far as the merchant service was concerned, were soon abolished on account of the difficulty of keeping the electrical circuits in a state of efficiency. The guns supplied to the merchant service which were not fitted for percussion firing had for this reason to be fired with an extemporised lanyard, and sight dials were painted with luminous paint as a substitute for night sights. Another handicap to efficient gunnery in the merchant ships was the absence of range-finders. The demand for the navy alone far exceeded the supply. Only in the few merchant ships armed with 6-inch guns were range-finders to be found from 1915 onwards.

The question of supplying howitzers or bomb-throwers to merchant ships first arose in May 1917, and orders were then issued to the officers concerned for the mounting of 700 7.5-inch howitzers, which were allotted to this purpose. Their projectiles weighed 100 lb., and they were all to be mounted forward. There were several delays. By September, partly on account of the cost of labour and material for mounting them, partly owing to the introduction of the convoy system, which somewhat reduced the urgent need for heavy armament in every individual merchant ship, a proposal was put forward to cancel the issue of these howitzers. In October the first of them were completed. It was then decided to mount them in all ships of over 3,000 tons gross, and to mount them aft, as near as possible to the gun or guns, so as to ensure better control and a steadier platform. In order to avoid delay in firing the first shot at a submarine sighted ahead, or off the bow, it was obviously necessary to arrange for an arc of training extending as far forward as possible. The

value of this form of armament depended upon being able to fire at a submarine sighted at close range before it could launch a torpedo. Since it was out of the question for a howitzer on the quarter to fire at anything off the opposite bow, it was necessary, in practically every case, to mount two howitzers in each vessel so armed.

Orders for the use of howitzers were issued by the Trade Division of the Admiralty on October 17th, 1917. These orders took account not only of the 7.5-inch howitzers referred to, but also of 10-inch bomb-throwers, weighing between two and three tons and throwing a projectile weighing 210 lbs. Two men were to be supplied by the Admiralty for each howitzer or bomb-thrower, or pair of howitzers or bomb-throwers, so mounted. At this stage the supply of this form of armament was looked upon purely as an experiment, as was frankly admitted at the time. Submarines were attacking every vessel without warning, and the sight of the track of a torpedo fired at close range was frequently the first indication of an enemy's presence. There was no further use for a gun in such cases. The gun had already accomplished its mission by compelling submarines to remain submerged and to have recourse to their torpedoes instead of remaining on the surface and employing gunfire. It was thought that under such conditions a bomb, fitted with a delay action fuse, designed to burst when about forty feet below the surface, might damage a submerged submarine, at least to the extent of preventing the use of another torpedo, or that such a bomb might have the effect of deflecting or destroying a torpedo already launched.

This anticipation was justified by experience, as was proved in the case of *Morvada*, of the P. & O. Company. Acting-Captain W. B. Macdonald, R.N., reported on April 11th, 1918, that on March 23rd, when a passenger in this vessel, sailing in convoy about a hundred miles west of Malta, he saw from the promenade deck the track of a torpedo approaching from a direction about two points abaft the starboard beam, and between 300 and 400 yards away when he sighted it. He judged that the explosion would occur in the engine-room and he at once cleared the passengers from the starboard side. Then he saw the splash of a projectile in the water, between the ship and the torpedo, followed by an under-water explo-

sion which deflected the torpedo, caused it to run parallel to, and in the same direction as the ship's course, rise to the surface about sixty yards away, and spin round with its engines still running. A second similar projectile bursting under water gave the torpedo its quietus. This torpedo was subsequently picked up, with its war-head blown off, by an escorting sloop, and taken to Gibraltar. The shots, which undoubtedly saved the vessel from destruction, were fired from a 7·5-inch howitzer through the quickness and presence of mind of John Crockan, R.N.R. gunlayer 3rd Class. When off duty he had sighted the track of the torpedo 700 yards away; he had then run to the poop, and aided by W. R. Brown, an able seaman in the Royal Fleet Reserve, had fired the howitzer.

The total number of these two types of ordnance mounted in British merchant ships before the conclusion of the war was 681, including 676 7·5-inch howitzers and five 10-inch bomb-throwers (first supplied in September 1918). These pieces were distributed in 350 vessels.

The use of machine-guns, rifles, and pistols in the mercantile marine, prescribed on April 26th, 1915, was initiated before the period here dealt with; it was described in the previous volume of this history.

The subject of howitzers and bomb-throwers leads naturally to that of depth-charges, which were designed for a similar purpose. The history of the introduction of depth-charges in the Merchant Service is as follows. Acting-Captain W. H. Sweeney, R.N.R., the Port Convoy Officer at Milford Haven, put forward a proposal in March 1918 to fit the ships in the wing columns of convoys with depth-charges to be dropped from chutes on each side of the poop. These depth-charges had for some time been the principal weapon against submarines, and during the previous year the demand for them had far exceeded the supply. A depth-charge is a device whereby a heavy charge can be exploded under water in the neighbourhood of a submarine, if located, and Lord Jellicoe puts this weapon first amongst those that actually achieved the destruction of German U-boats. To effect its purpose, a charge of 300 lb. of the explosive supplied had to be exploded within fourteen feet of its target. At twenty-eight feet the submarine might be expected to be forced to rise to the surface and expose itself to attack by gunfire or by

ramming, and up to sixty feet the moral effect upon the crew might produce the same result.

Captain Sweeney devised a plan for the tactical handling of convoys, the wing columns using depth-charges for offensive action against any submarine that might be located. The proposal to use depth-charges on so large a scale was not considered practicable by the naval staff, but in June 1918 a proposal to supply depth-charges to the rear ships of each column of a convoy was approved, the idea being that this procedure would increase the reluctance of submarines to attack convoys because of the greater risks they would be obliged to face, especially if attacking between the lines of ships. The first convoy of merchant ships so provided left Liverpool on July 14th, 1918, for Port Said, and the experiment was extended later to all through convoys passing by the Mediterranean route. These depth-charges and chutes were designed for easy transfer from one ship to another. Outward-bound vessels left them at Port Said, where they were picked up by homeward convoys. With a view to further extension of their employment inquiries were addressed to the Government of the United States, asking whether there was any objection to vessels so fitted entering American ports, and a satisfactory reply was received, but it was decided to defer this extension until the reports made known whether any further precautions might be necessary to ensure the safe use of this weapon in merchant ships.

The charges were placed under the care of the guns' crews, who received special instruction in handling them from the torpedo ratings on the staff of the senior naval officer at the port of departure. The proposed method of employment was that the rear ships should drop a sort of barrage of depth-charges astern of a convoy attacked, on the chance of injuring or destroying the attacking submarines. Certain precautions were necessary. Masters of ships carrying depth-charges were enjoined to drop them overboard if coming under gunfire, owing to the danger of the charges exploding if hit, and they were always to be kept at a safe distance from the armament of the vessels, on account of the risk of injury from the flash of the guns. When employed, they were to be set to explode at a depth of 200 feet. Normally, their pistols were set at "safe," and if dropped overboard with that setting they would not explode.

They were not to be released by vessels moving at a speed of less than 6 knots on account of the obvious danger involved to the releasing vessel and her crew. The experimental issue of depth-charges occurred so near the end of the war that there was no time to gather much experience of their value when used by merchant ships. The system has been described here to illustrate the additional responsibilities thrown upon the masters of British merchant ships and the extra calls constantly made upon the crews, as the war progressed, to increase their skill in handling new weapons of defence against submarine attack.

Another defensive apparatus that was developed during the course of war at sea was the artificial smoke-screen. Smoke-producing apparatus was first issued to British merchant ships during the middle of 1916 to assist them to escape when out-ranged by gun-fire, or when chased by hostile vessels. Several different types of apparatus were tried, the earlier types being open to the objections that there was risk of spontaneous combustion, that they made a big flame which showed conspicuously at night, and, when supplied to "oilers," caused a danger of fire at all times, and that some of them deteriorated rapidly when exposed to damp. Sixty-six vessels, however, in spite of these drawbacks, attributed their escape from submarines to the use of these earlier types of apparatus. The latest types were designated "F" and "G."

"F" type of smoke-producing apparatus was not susceptible to damp, and was therefore safe to stow in ships. It consisted of a steel container or float; when ignited and thrown overboard, the chemical contained therein burned with a dense white smoke, which was produced for a considerable period. Ten of these floats, and twelve igniters were allotted to each ship so supplied. The floats were cylindrical in shape, with a plug at the top which had to be removed and replaced by an igniter when put in operation. They were filled with two different mixtures, and painted red or blue to indicate which mixture they contained. They were always used in pairs, a red and a blue float being thrown overboard at the same time to enable the two different sorts of smoke generated to mingle and so form an efficient screen. The same apparatus, if considered desirable,



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DROPPING A DEPTH-CHARGE.

could be used on board the merchant ships, instead of being thrown overboard.

In "G" type, a fixed one principally issued to oilers, a "distributor" was fixed to the deck and connected to two steel cylinders. Smoke was generated by turning on two taps between the cylinders and the distributor. No light was used, and there was no flame. The distributor was in the form of an inverted hollow cone, containing a sprayer and a jet. Spare cylinders were supplied for use when the original cylinders were exhausted.

Both types of apparatus, especially the "G" type, required a certain amount of care and skill in the handling in order to ensure the best results. As a typical example of the efficiency attained, the case of the *Trentwood* can be quoted. This vessel, which was unarmed, was attacked during a voyage from Havre to Southampton, the attacking submarine first breaking the surface only 50 yards from the ship. Smoke-generating apparatus was at once used, and the vessel escaped by the aid of the smoke-screen so produced. The use of smoke screens called for skill not only in those who handled the apparatus itself, but also in the masters in handling their vessels tactically so as to make the best use of this aid to escape. Instructions to aid them in these tactics were issued at various times. These instructions assumed a final form in January 1917. Several points had to be considered, and a decision formed without delay. The most effective action to be taken was affected by several considerations, including the relative positions of the ship and of the attacking submarine with regard to the strength and direction of the wind, the proximity of land or shallow water, and so on. It was left to the masters, in the main, to follow their own judgment, as it was impossible to lay down any rigid rules for guidance in such varied circumstances. They were told that when a submarine was observed directly to leeward the ship had best steer straight to windward, only zigzagging very slightly in order to broaden the cloud of smoke being generated. Under such conditions a chasing submarine could form but little idea of the exact position of her chase, and the direction for gunfire could only be based upon guess-work. Apart from the question of smoke, a vessel with so small a free-board as a submarine would

also under such conditions be much hampered in her gunfire by being forced to proceed with her head to wind and sea.

If a submarine should be observed in such a position that the wind blew at right angles to the line joining the ship and the submarine, then the master was recommended to alter course down wind. The type ("F") of smoke apparatus which was thrown overboard was deemed the best for use under such conditions, the ship manœuvring on the side of the cloud remote from the submarine. With the smoke generated from the apparatus fixed on board there were great difficulties, and all that the masters using this apparatus were told was that they should manœuvre on the course giving them the greatest benefit from the smoke screen.

When a submarine was first observed directly to windward of a ship, the difficulty of taking advantage of a smoke-screen was the greatest. If the wind was strong enough to move the smoke screen so fast as to expose the stern of the ship, a quick zigzag was recommended as the best procedure. In all cases the suppression of funnel smoke was recommended, this smoke being of a different colour from that of the smoke screen, which was either white, grey, or yellow. The use of a smoke-box half way up the mast in order to screen funnel and masts from view was also suggested under certain conditions. Various additional hints were given about the probable procedure of submarines endeavouring to avoid the handicap of smoke-screens, and further details were appended about the best form of zigzag when under fire.

There was another insidious danger to be confronted by our merchant seamen in their voyages, the danger from submarine mincs. These were laid deliberately by the Germans in the highways of sea-traffic, and they formed a grave menace both to merchant ships and to war vessels under all flags. The "paravane," an apparatus towed at an angle from a ship's bow and designed to catch and to sever the moorings of mines, was first devised, as a means of protecting war vessels, by Lieutenant C. D. Burney, R.N. This apparatus was introduced for warships in 1916, and Lord Jellicoe mentions¹ that considerable opposition to its general adoption had been encountered, partly on account of

¹ *The Crisis of the Naval War.*



AN EFFECTIVE SMOKE SCREEN.

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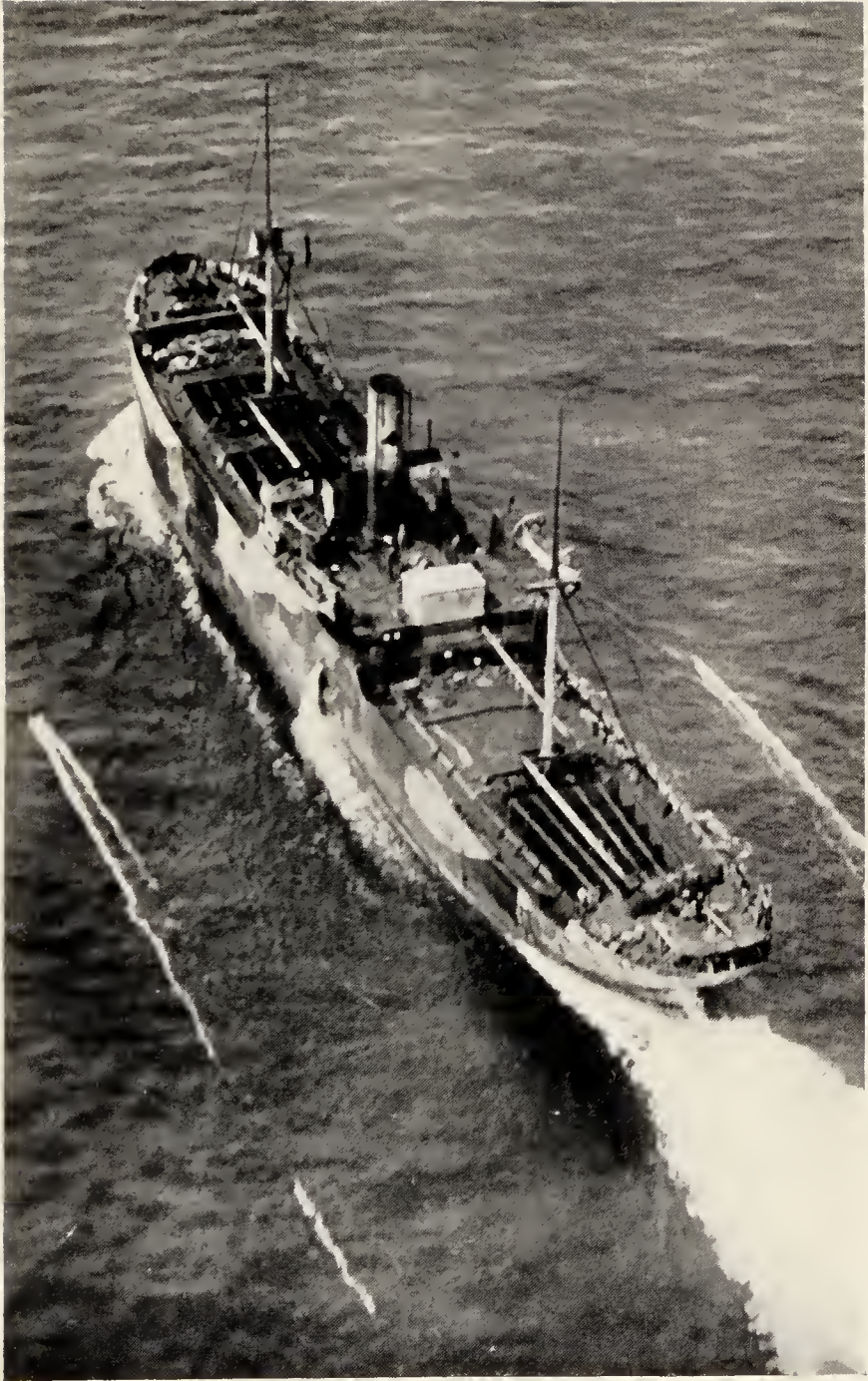
the difficulties experienced in the early days of development, and partly owing to the extensive outlay involved. The " otter " was a species of paravane adapted to the use of merchant ships. As in the navy, there was some opposition in the early stages to its introduction in the merchant service, but these difficulties were ultimately overcome. By July 1917 ninety-five merchant ships had been fitted with otters ; the figure rose to 294 by September and to 900 by December. By the end of the war 3,000 British merchant ships had been so fitted, and the use of the otter had been extended to many foreign vessels. Not only were many ships saved by the use of this invention, but, by cutting the moorings of mines, they sometimes disclosed the presence of hitherto unknown minefields, thus saving other vessels from destruction.

The story of the invention of the otter and of its introduction into the Merchant Service as a protection against submarine mines is not without interest. Its first predecessor, the explosive paravane or submarine sweep, was originally designed by Lieutenant Burney, as an apparatus for taking the offensive against submarines lurking beneath the surface. These explosive paravanes were towed in pairs, one on each quarter of a destroyer or similar vessel, with the object of their fouling a submarine, exploding, and so effecting its destruction. The immediate successor of the explosive paravane was the protector paravane, an apparatus of similar design fixed to the bows of H.M. ships and fitted with a powerful cutter to sever the moorings of mines, instead of an explosive charge to destroy submarines. It was proved by experiment that vessels so fitted could pass safely through minefields. When the towing wires, which formed a sort of wedge with its apex at the ship's bow, encountered mine-moorings, the mines attached thereto were deflected from the ship towards the outlying paravanes. The cutters then came into operation ; the mine-moorings were cut, and the mines floated harmlessly to the surface, where they could be destroyed by rifle fire or by other methods.

This brings us to the otter, the form of protector paravane issued to merchant ships. The first war vessel to sever a mine-mooring with her protector paravanes was the light cruiser CAMBRIAN, on March 16th, 1917.

The first merchant ship to achieve similar results with an otter was the *Hunsworth*, on July 16th of the same year, off St. Albans Head. Details are available of forty-three subsequent cases of mine-moorings being cut by the otters of British merchant ships between that date and the end of the war. Making no allowance for unreported cases, of which there were probably large numbers, the amount of British merchant shipping saved from disaster from submarine mines in the war by this means may be put at about 240,000 gross tons, and the value of the ships and their cargoes at about £23,000,000, without taking account of the valuable lives saved thereby.

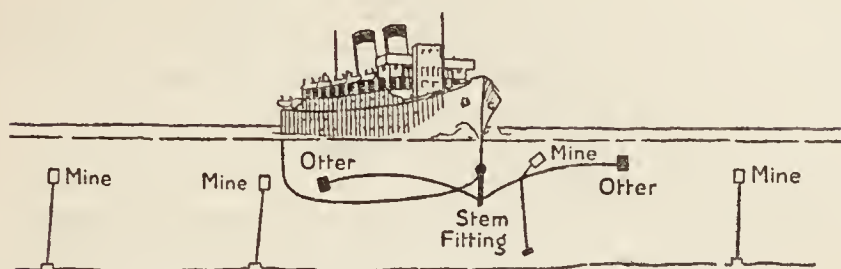
Otters can be described as sunken bodies, fitted with powerful cutting apparatus, towed by wires which extended outwards from the stems of vessels towing them. As long as the towing ship was under way, they remained in the same relative position, without this position being affected by her course and speed. In order to understand the principle on which they worked, a comparison may be made with a kite, flown on a still day. To make the kite rise in the air, the kite-flier must produce air-pressure on its surface. This result can be attained by the rapid movement of the kite-flier along the surface of the ground. When the kite feels the air-pressure so created, it rises in the air at an angle depending upon the angle of attachment of the string. Substituting water-pressure for air-pressure, the "otters" were forced by the forward movement of the ship to assume a position causing the towing wire to form an angle with the ship's course, similar to the angle formed by the string of a kite with the surface of the ground. We can, therefore, imagine a merchant ship, which was so provided, ploughing her way through mine-infested waters, protected by a wedge of wire with its point at her stem and its flanks about 220 feet apart secured to otters, below the surface, which were capable of cutting the moorings of any mines that might be encountered. Such a merchant ship would be safe against any mines not actually struck by her stem itself, at the point of the wedge, and this risk was almost negligible, partly because of the very small area affected, and partly because of the tendency of the bow-wave to deflect a mine from the actual stem-line to the projecting wire



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MERCHANT STEAMER WITH PARAVANES OUT.

attached to the otter. The use of the apparatus is made clear by the following diagram :



"OTTERS" IN ACTION AGAINST SUBMARINE MINES.

We have seen that an interval of four months elapsed between the date on which a man-of-war (*CAMBRIAN*) and a merchant ship (*Hunsworth*) were saved by cutting the moorings of mines by this method. The year 1917 witnessed a tremendous strain upon British industries engaged upon the manufacture of war material of all natures for our sea, land, and air forces. There was, consequently, as we have seen, considerable delay in the supply of guns and howitzers to merchant shipping. Before otters and the special towing-wire required for use with them could be manufactured in large quantities, special plant had to be made. Moreover, the urgency of the position required that the experimental stage and the manufacturing stage should be carried on simultaneously, thus introducing additional complications into the manufacture, supply, and correct handling of the apparatus. In order to ensure security, it was obviously necessary to fix the otter-wires as deeply below the surface as possible on the stem of each vessel. For this to be done it was necessary either to place her in dry-dock or to raise her bow clear of the water. The great difference of design between merchant ships caused an additional complication, some vessels having overhanging bows, others straight stems, and some requiring a downward prolongation of the stem to provide a deep enough point of attachment. The fittings for holding the wires had to be varied accordingly. For each type of vessel, special attachments had to be designed and differently fitted.

Having described the nature of the various weapons

and appliances supplied to the merchant service to aid in combating the menace from hostile surface craft, from submarines, and from submarine mines, it will be well at this stage to explain briefly the system adopted to allocate the incidence of cost for these services, both before the war and throughout the period of hostilities. All expenses in connection with defensive armament before the war were borne by the shipowners. From the outbreak of war until the end of the year 1915 the Admiralty bore the cost of fitting the ships and of mounting the guns. They also paid and victualled the guns' crews, but they did not accept any liability for loss of trade due to delays caused by gun-mounting. This wholesale liability, which fell upon the Admiralty for the expense of arming merchant shipping, was later applied only to ships of which the building had been completed on or before March 31st, 1916. For vessels with their port of registry in the British Isles, the policy ultimately adopted to govern the incidence of the cost of mounting guns, as between the Admiralty and the owners, was embodied in an Admiralty memorandum dated June 1917. In ships completed after March 31st, 1916, the cost of fitting for the guns was at the charge of the owners. "Fitting" was defined as including stiffening the vessels and providing gun-seatings, magazines, ready racks for ammunition, weather screens for the guns, accommodation for the guns' crews, and such means of communication between the bridge and the gun as might be necessary. No expenses for delays in resuming trade, due to gun-mounting, fell upon the Admiralty, and provision was made that the Admiralty directions must be followed for landing and for taking up guns. The Admiralty, on their part, provided the guns and their mountings and also the ammunition and stores in connection therewith. They also met all charges for mounting and dismounting the guns, and for lighterage expenses, but not for port charges, pilotage expenses, charges for landing ammunition under port regulations, or expenses resulting from delay, deviation of voyage, or moving ships in harbour, whether arising out of fitting, carrying, or changing the armament. The Admiralty also provided, for each gun which they mounted in a merchant ship, a trained gunlayer, a second, and, for certain guns, a third hand, bearing all the expense of

paying and of victualling these men, who were to be carried in addition to the normal ship's complement.

For ships on the British Colonial register the Admiralty assumed no liability excepting for the wages of the guns' crews. The frequent transfers of guns and crews, which were unavoidable, would have made any other system impossible on account of the difficulties in adjusting accounts. All the Dominions agreed to this system. In respect to certain prize ships, which were being run by the Australians, and some troop transports requisitioned in Australia, the Australian Government accepted liability for the cost of all work done locally on the ships, and for small incidental expenses incurred elsewhere. The Admiralty paid for mounting, dismounting, and fitting work away from Australia. Such was the policy for allocating cost, as affecting guns, in the United Kingdom and the Dominions.

For the expense of mounting and fitting howitzers the Admiralty at first accepted all responsibility, but the owners ultimately were made liable for fitting vessels that were laid down on or after December 1st, 1917. The nature of fitting prescribed included (1) stiffening the vessels to withstand the heavy downward thrust caused by firing this nature of ordnance, (2) providing seatings for the mountings, magazines, ready-racks for shells or bombs, weather screens and accommodation for the guns' crews, and (3) installing such means of communication as might be needed between the bridge and the howitzer. The Admiralty provided free of charge the howitzers, ammunition, and stores connected therewith. The provisions about expenses entailed by delays due to mounting, dismounting, and so forth were similar for howitzers as for guns.

For the cost of supplying, embarking, installing, and disembarking otters, depth charges, and smoke apparatus to merchant ships, the Admiralty accepted full responsibility.

At this stage it will be well to note the nature and strength of the personnel employed by the Admiralty to carry out these obligations on their behalf. In the succeeding chapter, some details will be given of the duties performed by some of this personnel in connection with training the merchant seamen in their duties, but the

officers and staff in charge of the defensive armament of merchant ships had far wider functions to perform.

The work of arming British merchant ships throughout the war was carried out under the general superintendence of Captain W. H. D. Margesson, R.N., of the Trade Division of the Admiralty War Staff. Started on a small scale, it grew, like other war services, very rapidly in scope and importance, as may be gathered from the following brief summary of the headings indicating the nature of the activities of this section of the staff. The work included: (a) Fitting ships to enable guns to be mounted. (b) Constructing magazines and providing accommodation for guns' crews. (c) Mounting guns, and subsequently transferring them so as to ensure the fullest use in the submarine danger zone of the armament resources that were available. (d) Keeping the armament in a state of efficiency. (e) Supplying smoke-apparatus to the whole merchant service. (f) Fitting for howitzers and bomb-throwers. (g) Mounting each nature of ordnance. (h) Supplying Lewis guns for protection against air-craft, and rifles for sinking mines. (i) Supplying zigzag clocks, binoculars, light filters, and such-like appurtenances. (j) Supplying and replenishing ammunition. (k) Fitting vessels with depth charges, and chutes for launching them.

The staff were also charged with the allocation of guns' crews and with arrangements for drilling them when in harbour, as described in the next chapter. Such matters as fitting crows' nests to the masts, making arrangements for darkening ship, and instruction in signalling also came to some extent under the control of this branch. The total strength at the time of the armistice numbered 803, and included 172 officers, warrant officers, and overseers, and 135 armourers. Out of these numbers Captain Margesson's staff at the Admiralty numbered 27, including 8 officers. Apart from accountant officers and the clothing depot staff, the numbers distributed at the various ports in the United Kingdom, including London, were 56 in the Thames, 31 in the Humber (Hull and King's Lynn), 37 in the Tees (Middlesbrough), 70 in the Tyne (Newcastle), 21 in the Forth (Leith), 61 in the Clyde area (Glasgow and Lamlash), 104 in the Mersey area (Liverpool, Manchester, and Holyhead), 120 in South Wales area (Cardiff, Llandaff, Avonmouth, Barry, Newport, Swansea, and Milford Haven),

23 on the south-west coast of England (Devonport and Falmouth), 38 on the south coast (Southampton, Portsmouth, Newhaven, and Littlehampton) and 30 in Ireland (Belfast). There were also 2 officers and an armourer at Gibraltar and at Port Said, one officer and an armourer at Marseilles, 2 officers and 2 armourers at Dakar, 2 officers at Cape Town, and one at Jamaica.

The growth of the movement may be gathered from the fact that, when war broke out, the staff only comprised three officers, each assisted by a pensioner Chief Petty Officer as gunnery instructor and by one armourer. Office accommodation for their use was provided in London by the Shaw Savill & Albion Company, at Liverpool by the White Star Line, and at Southampton by the Royal Mail S.P. Company. The offices at Glasgow, Cardiff, and Newcastle were opened in 1915. In 1916 an officer-in-charge was appointed at Hull, in 1917 Leith was separated from the control of Glasgow and Middlesbrough from Newcastle, and an office was opened at Belfast. The officer-in-charge at Devonport was appointed in 1918. Final instructions for the work to be carried out by the various branches of the staff concerned were issued by the Admiralty War Staff in April 1918. The points to which, as the result of experience, the special attention of sectional officers was drawn for their guidance when visiting defensively armed merchant ships give a good idea of the general policy adopted with regard to their armament. These points merit attention, and it will be as well to put them on record in order that this valuable experience in the practical working of the system may be preserved.

They came under various headings:

1. *Armament*.—Whether the ship is suitable for a heavier armament. Cleanliness and efficiency. Obstructions in the line of fire. Maximum arc of fire. Arrangements for the use of rifles. (These should be handy to the bridge, ready for use. They were under the personal custody of the master.)

2. *Ammunition*.—Position of the magazine. Supply ready for use. Quantities actually on board. Quantities required. Whether stowed properly.

3. *Defensive armament ratings*.—Accommodation. Efficiency. Dress and conduct. Arrangements for victualling. Routine at sea and in harbour. Whether

they are supplied with the latest instructions, and whether such instructions are understood and carried out.

4. *Organisation for action*.—Numbers of merchant crew detailed to assist the naval ratings at guns and howitzers, and to supply ammunition. Opportunities afforded to them for drilling at the weapons. (Men holding Crystal Palace certificates, as explained in the next chapter, should have been detailed to complete the guns' crews.)

5. *Smoke apparatus*.—Whether up to date, and kept in a clean and efficient state. Whether the proper quantities were on board. Where it was stowed, and whether easily accessible. Whether the officers and men who use it thoroughly understood the instructions.

6. *Look-outs*.—Position of the crow's nest. Number of special look-out men.

7. *Zigzagging*.—Supply of zigzag clocks. All ships to zigzag day and night whenever possible, irrespective of speed, as ships were rarely, if ever, hit by a torpedo if carrying out an efficient zigzag. The great importance of zigzagging to be impressed upon all masters.

8. *Navigation lights*.—Visibility to be reduced, in accordance with instructions, and position of side-lights in some cases to be altered.

9. *Darkening ship*.—Galleys, wheelhouse, etc., besides the scuttle and engine-room skylights, to be darkened by efficient permanent screens. (Black paint was found to be very effective, applied to scuttles.)

10. *Watertight doors*.—Tunnel and watertight doors only to be opened at sea, with the master's approval, when absolutely necessary.

11. *Wireless telegraphy*.—Whether operators and material, if fitted, were efficient. Numbers of operators.

12. *Flashing lamps*.—Arrangements for limiting their range and their arc of visibility. An efficient flashing lamp was defined as having a maximum range of visibility of three miles in clear weather, capable of being dimmed down, by a diaphragm or otherwise, to a range of one mile. The arc of visibility was in no case to exceed 3 points (about 34 degrees), and the arc was limited by means of a small funnel, shaped like a megaphone.

13. *Otter gear*.—Sectional officers were asked to overcome, if possible, the objection to the use of this important safeguard against mines which obtained in the

Merchant Service owing to difficulties experienced in handling it in vessels with small crews.

14. *Convoy instructions*.—They were also instructed to explain to the masters the latest information about handling convoys.

15. *Confidential books*.—To make sure that a properly weighted bag was kept in readiness to sink confidential publications, if in danger of falling into the hands of the enemy.

Any suggestions made by masters and their officers were to be carefully noted, and the latest information was given to them, and to the ships' companies, about the courses of instruction open to them.

These details give a good idea of the many points which had to be studied by the Merchant Service while in harbour in order to ensure the best use being made of the facilities placed at their disposal by the Admiralty to aid them in defending their ships. The work undertaken was strenuous and continuous, and without it the results attained could not have been achieved. The arts of gunnery and of handling ships in company, so as to make the most effective tactical use of the weapons employed, are a lifetime study in the Royal Navy. We have seen by the foregoing notes that arming of merchant shipping, in order to be effective, entailed the hasty acquirement of skill, both in the gunnery of individual ships and in their tactical handling, by the personnel of the Merchant Service. The tactical policy in men-of-war and in merchant ships differed. While offensive action against an enemy was the primary consideration in one service, escape and the security of cargoes were placed above everything else in the tactics enjoined upon the other. Defensively armed British merchant ships were not war vessels; they were always commercial vessels endeavouring to proceed upon their lawful occasions, to escape, defending themselves, and to safeguard their cargoes when attacked. They complied in every respect with pre-war practice and with international agreements and understandings in the face of extreme provocation by a ruthless enemy who cast all such considerations aside.

Before passing to the subject of training the personnel of the Merchant Service to perform the new combatant rôle which they so willingly assumed, it will be desirable

to place on record that a memorandum prepared by the Admiralty in July 1918 on this question contained a statement to the effect that the experience of the war had shown that the defensive arming of merchant ships, together with the system of convoys, had been successful in combating unrestricted submarine warfare, and that, unless some new method of anti-submarine defence was invented, a similar policy would be adopted in any future war.

At the close of the year 1918 all British vessels under 3,500 gross tons, and all tramp steamers up to 5,000 gross tons were being disarmed as opportunity offered, but the between-deck stiffenings were not being removed from vessels of 1,600 gross tons and above, and all vessels of this size that were being built were still being stiffened on the basis established before the conclusion of hostilities on November 11th.

This completes the story, from the material point of view, of the defensive arming of the British Merchant Service in the great war. There remains the personal and more inspiring aspect of the question, which is dealt with in the next chapter.

CHAPTER V

TRAINING THE MERCHANT SEAMEN TO FIGHT

IT has been noted that, up to a certain period, it had been possible to supply to the Merchant Service a sufficient number of skilled personnel, drawn to a large extent from the Royal Marines. The time had now come for the officers and men serving under the Red Ensign to undertake further responsibility for handling the weapons and defensive appliances which had been supplied to them. In order to meet their needs, various courses of training were established by the Admiralty, and it was at these courses that those serving under the White Ensign and the Red were knit together in one great British sea-service, to combat the grave peril to the Empire, the former by offensive, the latter by defensive warfare. Previous differences of training and of outlook counted for nothing in face of the country's danger. The Royal Navy provided the instructors, and the Merchant Service, from the experienced master to the newly joined deck-hand, flocked to the instructional courses to profit by the opportunity of acquiring skill in an art new to them.

In the preceding chapter, we investigated in detail the measures taken by the Admiralty to equip the Merchant Service with weapons and defensive appliances to withstand the grave menace which arose from this submarine campaign, as well as from the minefields sown broadcast in the highways of sea-traffic. Neither weapons nor appliances would have availed, unless they had been handled intelligently, and unless the personnel of the Merchant Service had accepted a system of discipline and technical training differing *in toto* from all their previous experience.

Reference has been made in the previous volume of this history that, apart from the ordinary instruction

of the R.N.R., the Admiralty made arrangements in July 1916 for other officers of the Mercantile Marine to attend a short course of training in gunnery at the R.N. Gunnery School at Chatham. This first experimental course did not attract a sufficiently large number of officers, and it was therefore discontinued. Towards the end of the same year (1916) a new proposal was put forward, to train "officer instructors," selected from the list of R.N.R. officers, and subsequently to use them to instruct the Merchant Service in gunnery and in cognate subjects, thus spreading throughout the service a better knowledge of the best defensive measures to adopt against submarine attack. Fifty officers of the R.N.R. were accordingly appointed to the EXCELLENT, the gunnery establishment at Whale Island, Portsmouth, for a fortnight's course in :

(1) Gun-drill and stripping guns from 12-pounder to 6-inch, of the nature supplied to defensively armed merchant ships.

(2) The control of gun-fire at sea.

(3) The tactical use of smoke apparatus.

(4) The use of range-finders of the description supplied to some merchant ships.

These fifty R.N.R. officers joined the EXCELLENT, to be trained as officer instructors, in four approximately equal batches between January 15th and February 25th, 1917. When qualified, they were allocated by the Director of the Trade Division of the Admiralty to various defensively armed merchant ships which were sailing in the area where German submarines were most active, and arrangements were made for their transhipment to other vessels when the vessels in which they were originally borne reached a port at the limits of the area. This system proved to be wasteful of effort. In April 1917 fifteen of the officer instructors were withdrawn, and distributed amongst the shipping ports of the United Kingdom. Later on more of them were withdrawn from afloat and distributed on shore. Four were sent to the Mediterranean at the disposal of the Naval Commander-in-Chief, one went to Gibraltar, and one to Halifax, Nova Scotia. Ultimately all were withdrawn from the sea, with the exception of one in each armed escort, and they were distributed amongst the different shipping and convoy-

assembly ports of the United Kingdom, where they were attached to the staff of the officer in charge of the defensive armaments. By the end of the war 21,064 visits had been paid by them to merchant ships, and 19,705 officers, including 3,700 masters, had been interviewed.

At first the duty of these officer instructors was purely instructional. They visited the ships at their ports, and they instructed the officers and men in gunnery and in other defensive measures for combating the submarine menace. Later on, in January 1918, inspection work was added to their instructional duties, and this work soon occupied most of their time. They were charged with the duty of inspecting vessels to ensure compliance with the orders issued by the Admiralty, under the Defence of the Realm Act, for the proper darkening of ships, and for reducing the visibility of navigation lights. Questions were raised in the Merchant Service about the nature of these extended duties, and in April 1918, as we have noted in the preceding chapter, it was found desirable to issue a circular to shipowners and to masters of the British Mercantile Marine to explain the new duties and distribution of these officer instructors. The general scope of this circular has already been mentioned, in connection with the supply of armament and appliances. The actual wording of the principal clauses ran as follows :

“ These officers have instructions to inquire into and inspect the arrangements made, particularly :

“ (1) For the proper screening of lights in cabins.

“ (ii) For compliance with Admiralty orders in regard to reduction in brilliancy of navigation lights, and the proper screening of stern lights for use in convoy.

“ (iii) For reduction in power and proper screening of signal lamps.

“ (iv) For the fitting of crows'-nests.

“ (v) For ensuring water-tight doors being kept closed at sea, and for the immediate closing of such as require to be opened periodically.

“ They are also charged with the duty of drilling the guns' crews, of inspecting guns and howitzers, and of arranging lectures at the port for the instruction of masters and officers in regard to all questions connected with the submarine menace and how to combat it.

“Signal instructors are attached to the staffs of the officer commanding defensively armed merchant ships with a view to signal exercises being arranged for, and instructions being given to, the officers and men responsible for signal duties on board the merchant vessels in port.”

In order to keep in touch with the latest methods for dealing with hostile submarines, the R.N.R. officer instructors also attended periodically the submarine menace courses which were conducted at various places by officers of the Royal Navy.

These submarine menace courses were established in order to give to the masters of merchant ships a knowledge of the weapons with which they were supplied, to explain to them the reasons for the various Admiralty orders which were issued from time to time, especially those affecting the handling of the ship, the darkening of the ship at night, and other measures needed to combat the submarine menace. Before going into further details, we can picture to ourselves the nature of the “students,” men of experience and masters of their profession, who flocked to these courses in order to learn how best to apply their strong individuality and their patriotic determination to carry on at all costs the sea traffic upon which the issue of the war depended. They were thus described by an eye-witness :

“The strength of an average class was fifty, and it included the young merchant officer and the veteran of seventy; the Cunard captain and the tramp-master running coal out of Cardiff to France; the mate of a pig-boat and the first officer of a large liner. Amongst them were men such as a master who was for weeks a prisoner in the EMDEN; a mate who, after several days in a U-boat, was transferred to Germany, and was subsequently repatriated shattered in health; a captain, five times torpedoed, still carrying on, and hoping to ‘get some of his own back on them’; and an officer who did five days in an open boat after leaving a sinking ship in the Bay.”

A naval officer has left a record of his impressions :



FISHERMEN DRILLING ON SHORE.

[Copyright, Imperial War Museum.]

“ To control one of these courses is an extremely interesting job, and one in which the R.N. officer temporarily incapacitated from sea—as are most of the instructing officers—can feel that everything that he does is well repaid him. It can be imagined that all sorts and conditions of merchant officer, with every sort of yarn to tell, is met with . . . and the naval officers employed on these duties can safely say that they have a more intimate knowledge of the Merchant Service officers, and the conditions that they work under, than any other officers of the Royal Navy.”

It was largely through the influence of these courses that the two great national sea services were brought more closely together, a common bond of sympathy and understanding being forged.

The first submarine menace courses, lasting from Tuesdays to Fridays, were started at Chatham on February 27th, 1917. The officers attending them were made as comfortable as possible by the navy. They were generally provided with accommodation in the naval barracks or in an overflow ship, and, when this was found possible, all their messing expenses were paid by the Admiralty. When no room could be found for them in naval quarters they were granted 12s. a night as subsistence allowance, and the Admiralty paid, at the rate of 3s. a head per day, to the ward-room mess of the naval barracks in order to cover the expenses of providing them with luncheon. Free passes to and from their homes or ships were granted. The courses at Chatham proved so attractive and so valuable that arrangements were made to hold similar courses at Cardiff for the masters and officers of vessels using the South Wales and other Bristol Channel ports. A trawler and a “C” class submarine were specially employed there to assist in the practical instruction. The first of these Cardiff courses was opened on June 11th, 1917, and it was soon found necessary to shorten them to two and a half days, on account of the quick turn-round of vessels in Bristol Channel ports. The Chatham course now became inconveniently crowded, so a third submarine menace course for masters and officers was started in the EXCELLENT. There being less vacant naval accommodation at Portsmouth than at Chatham, the

officers attending were usually accommodated at an hotel, and they drew subsistence allowance at Chatham rates. By the autumn of 1917 experience proved that weather conditions in the Bristol Channel were so uncertain that the day's practical work at sea could seldom be carried out at Cardiff. This being the most important part of the course, arrangements were made to transfer the instructional work from that port to Glasgow, where the first course was started on November 16th, 1917. Following the Cardiff precedent, only short courses of two and a half days were at first attempted, but from March 5th, 1918, the Glasgow courses lasted for four days, which was the same as the length of the course at Chatham and Portsmouth.

So far the courses had all been voluntary, but, as the submarine menace continued to develop in intensity, the Admiralty decided that it was necessary to make them compulsory for all masters and chief officers of British merchant ships of 1,600 tons gross and above, in order to ensure uniformity in opportunity for officers serving under different owners to acquire skill in fighting their ships, and to gain knowledge of the different weapons and new methods of defence that were constantly being introduced. This result was secured by an order dated May 14th, 1918, issued by the Admiralty under the authority of the Defence of the Realm Act. On September 12th, 1918, the order was extended to second officers and above, in all vessels of over 1,000 tons gross. In order to provide for the extra numbers attending under this compulsory system, a fourth submarine menace course was started at Devonport, and extra living and lecture-room accommodation was provided at Chatham, Glasgow, and Portsmouth. Two thousand six hundred and twenty-two masters and 3,159 other officers of the Merchant Service attended the voluntary courses at these four places between February 27th and June 3rd, 1918. Between that date and November 22nd, 1918, the closing date, 1,998 masters and 2,447 officers attended the compulsory courses, so that the officers who attended the submarine menace courses held in Great Britain numbered, in all, 10,226 (4,620 masters and 5,606 other officers). The following table gives details of their distribution between the different ports :

SUBMARINE MENACE COURSES IN THE UNITED KINGDOM

February 27th, 1917, to November 22nd, 1918

Port.	Voluntary Courses.		Compulsory Courses.		Total.	
	Masters.	Officers.	Masters.	Officers.	Masters.	Officers.
Chatham . . .	1,798	839	481	637	2,279	1,476
Portsmouth . .	207	1,267	396	477	603	1,744
Devonport . . .	—	—	455	548	455	548
Glasgow (4 days) .	190	206	666	785	856	991
Cardiff and Glasgow (2½ days)	427	847	—	—	427	847
Totals . . .	2,622	3,159	1,998	2,447	4,620	5,606

In course of time it appeared that, in order to spread still more widely the knowledge of the nature of this new and deadly enemy threatening the security of sea traffic, and the best way to cope with the danger, supplementary submarine menace courses must be started in overseas ports. Good use was made by the Naval Commander-in-Chief in the Mediterranean of the R.N.R. officer instructors who, as we have seen, had been placed at his disposal. The first of the courses conducted by them was established at Marseilles, where work was begun on November 9th, 1917. At this port 267 masters and officers, from 133 vessels, attended two-day courses; 94 merchant ships were visited, and 469 ratings in their crews were instructed in gunnery, the use of smoke apparatus, and other kindred subjects. At Alexandria courses of two and a half days were started on December 9th, 1917, and up to September 10th, 1918, these courses had been attended by 136 masters and officers. Many others attended for a day or a day and a half at this port, but were prevented from completing the instruction by their ships sailing. Similar courses were established in December 1917 at Port Said, where much traffic passed: 157 masters, 558 officers, and 114 apprentices took advantage of the facilities given at this port. The total number of masters and officers of the Merchant Service who passed through submarine menace courses in the United Kingdom and abroad (not counting apprentices) was therefore:

United Kingdom . . .	10,226
Marseilles . . .	267
Alexandria . . .	136
Port Said . . .	715
Total . . .	<u>11,344</u>

In this connection, efforts were also made to give similar facilities for attending submarine menace courses at Bombay and in the United States. A course was started at Bombay on August 19th, 1918, but transports and trading vessels only remained in harbour there for an average of three or four days, and it was found that the masters and officers were too much occupied with their ordinary work during these short periods to attend a complete course. An attempt was made to deal with the situation by arranging programmes of lectures, but by October 1918 the attendance was found to be so small that the courses and the lectures were discontinued. They were attended by a total of seventy-five officers. The question of establishing instructional facilities at Calcutta was also raised, but it was not considered that the number of vessels calling there justified the establishment of further classes.

By July 1918 the United States Navy Board had established submarine menace courses for officers of the American Merchant Service at New London, on the lines of those held in the United Kingdom. British officers of vessels trading between French and Mediterranean ports and the United States had great difficulty in complying with the Admiralty order of May 14th, 1918 (rendering attendance compulsory), and by September 1918 arrangements were made with the United States Government to enable them to attend the courses at New London. But no ship containing officers who had not attended the course elsewhere remained in harbour long enough to take advantage of these facilities before the conclusion of hostilities.

The Admiralty realised more and more that it was necessary to take the personnel of the Merchant Service into their confidence, and that in order to cope with the serious danger the officers must first understand the nature of the submarine, its limitations and its possibilities. Lectures delivered at the submarine menace courses covered the ground as intensively as possible, and brought out the chief points of interest. The members of the classes were taught, for instance, that the Germans did not, like the French, use steam for their submarines. That the much-vaunted German submarine cruiser was really a modified *Deutschland*, which was not fast, could

not exceed 16 knots on the surface, and could only dive very slowly, but that it could carry enough fuel to keep the sea for about four months. That the chief source of weakness of submarines was their need of electric power when submerged—the more they were forced to go under water and use their electricity, the sooner the batteries became exhausted. That merchant ships, by zigzagging, caused submarines to use up their battery power, as they had to move at high speed in order to correct their position. That the maximum speed of a submarine when submerged was only about 9 knots. That within two hours submarines when manœuvring under water, exhausted their batteries, and were then obliged to come to the surface, where they were specially vulnerable. That the bigger a submarine the more difficult it was for her to dive. And so forth.

Sufficient technical details of the construction of a submarine were given to explain the scope of its movements. The method of charging the batteries was expounded, as well as the favourable hours, before dawn and after sunset, for performing this operation, which was a noisy one. As far as possible each lecture was followed by a practical demonstration in order to illustrate its points. A “submarine attack table” was used to demonstrate the methods employed by a submarine in attacking single ships steering straight and zigzag courses, and convoys. Different forms of zigzag were demonstrated and explained, including one which, when employed, had always proved successful. As an example of the tactical advice given, the following may be quoted: “Always zigzag, night and day, but on sighting a submarine make him punch into a head sea. Lie close to the wind. Make every use of wind and sea, and steer the course which makes matters as difficult as possible for the submarine. When in gun action with a submarine do not zigzag; so long as you are hitting keep a steady course, otherwise you upset your spotter and gunlayer.”

Owing to the brevity of the courses (four days), all the instruction given was simplified as much as possible, and most of the teaching was carried out through the eye, by means of models, diagrams, photographs, and actual service gear. The submarine attack tables did more to convert the merchant seamen to the necessity of zigzagging than did any amount of expounding of principles or

issue of written orders. The best form of zigzag was shown to depend upon whether a fast or slow vessel was concerned, and whether the special dangers of a particular area called for special precautions. A visit to a submarine pointed the moral of the instruction, and the members of the class were usually sent to sea in a tender to watch a submarine submerging and attacking. One or two torpedoes were discharged at a range of about 600 yards, so as to pass close to the tender, the object being to enable the members of the class to recognise the "blob of discharge," and the track of a torpedo, under such conditions.

Armament was not supplied to merchant seamen to enable them to sink submarines, but to help them to defend themselves when their ships were attacked, and this needed skill in gunnery, to which as much attention as possible was devoted in the short time available. This, again, was made as realistic and practical as possible by using a "spotting table" on which submarines could be placed, steering different courses, continually altered to necessitate a change in deflection. A model of the stern of a merchant-ship was fitted on the table, with a gun mounted thereon, the whole rotating on a pivot, so that when the ship was supposed to alter course the model was turned in the required direction, and the spotting officer could see practically what change of deflection was needed. While one officer spotted, another set the sight on a sight-bracket to the range and deflection, according to his instructions. The "rate" at which ranges opened or closed, the important bearing of this rate upon the chances of hitting, the means of determining a "rate of change" so as to continue hitting, "bracketing" to find the range, and all such technical matters were also taught practically. The officers were then given experience in controlling fire at a towing target. They were taught enough drill to understand the duties of the different members of a gun's crew, and they were told sufficient about the material handled, especially the parts needing attention to keep a gun and mounting efficient, causes of failures and of misfires, and so forth. The instruction about targets applied not only to submarines, but to torpedoes, which formed one of the most useful features of the gunnery course.

Other methods of defence contributing to the safety of merchant ships were also explained, notably the use of

screens of heavy smoke emitted by smoke-projectors which could be dropped from the ship. As we have already noted, merchant ships were supplied with this apparatus, which was being carried by 4,005 of the vessels afloat at the end of the war. The value of camouflage was also explained. Many merchant seamen had seized independently upon the idea of disguise, and, although they did not adopt special painting for their vessels, they altered the outline to deceive the enemy, and they mounted dummy guns or howitzers. The general methods of camouflage formed a feature of the instruction at the courses for masters and other officers.

Owing to the large number of applications received by the Admiralty to make provision for instructing cadets and apprentices in gunnery, a scheme for a course at Chatham Gunnery School was sent in on July 12th, 1917, and the general arrangements were embodied in a circular issued by the Trade Division of the Admiralty on August 1st. These courses lasted for ten days, assembling on a Tuesday and finishing on the following Friday week. While under instruction the candidates lived on board a man-of-war, slung hammocks, and were members of a special mess, their messing and travelling expenses being paid by the Admiralty. They wore the uniform of the company to which their vessels belonged. Those who obtained certificates were paid 6*d.* per day while serving in guns' crews of defensively armed merchant ships, while the guns were on board, for a period of fifteen months after qualification. Those wishing to requalify had to apply, three months before this period elapsed, to attend a requalifying course. These courses were extended to Devonport before the end of August, and to Portsmouth in September, 1917. Instruction was given in gun-drill and in stripping guns of all natures from 6-inch to 12-pounder, of types which were mounted in defensively armed merchant ships. The total number attending the courses was 1,300.

While skill in the use of weapons can be taught, heroism in action depends upon in-born qualities. An idea of the nature of the human material, with which the instructors at those courses for cadets and apprentices were called upon to deal, can be gathered from a typical example, occurring during the action between the *Manchester Trader*

(3,938 tons gross) with a German submarine in the Mediterranean, seven or eight miles S.E. of Pantellaria Island, on June 4th, 1917. The vessel was armed with a 13-pounder, which was outranged by the submarine's gun. The master (Mr. F. D. Struss) reported :

"The submarine was sighted on the port quarter, distant about five miles. . . . At the same instant he fired his first shell, dropping a short distance from my quarter. The shot was followed immediately by another which passed over the bridge into No. 1 hold and exploded. By this time I had the submarine dead astern and had fired my gun, but could not reach him. His shells came at the rate of two every minute, scoring hits in No. 1 hold and No. 3 hold continuously. During the early part of the action I found that, by watching for the flash from his gun, and then altering my course half a point, I need only take on board about one shell of every three or four, the others striking a sliding blow on the ship's side. So I kept doing this during the time the action lasted. My S.O.S. was sent out by wireless about 7.5 a.m., and, being answered, I continued to send out positions, course, speed, etc. At 8.30 a.m. I threw all my confidential papers over the side, same sinking at once.

"The submarine ceased fire for about twenty minutes but continued to chase. I just fired at intervals to let him know that I could still keep him off. At 9 a.m. he shot away my wireless, and, shortly afterwards, made me alter course from N.E. to S.E. Having no wireless, I was unable to inform anybody of this change of course. At 9.30 a.m. I imagined that I hit him, as a flash was seen just abaft his conning-tower on the port side. Up to this part of the action he had been zigzagging across my stern, but now he was either end on to me or else showed me his starboard side. My ammunition was now down to seven high-explosive shells and five practice. So I fired a practice one to let him know he couldn't come too close, which he was trying to do. My gun was next loaded with a high explosive shell. I was waiting for a chance to fire it when, at 9.45 a.m., a shell came over the poop, killing the leading gunner, firing the shell from my gun, jamming the breach and putting the elevating gear out of action. The submarine

detected this, and kept straight in my wake, shelling all the time and coming closer. At 10.30 a.m. he was shelling me very heavily, shells falling on deck or striking the ship's sides glancing blows. My crew were all under cover by now, only myself and Apprentice Sutcliffe, who steered the vessel during the action, being on the bridge, all the engineers being below firing, trying to get more speed. At 11.15 a.m. surrendered, owing to the submarine being close and making my ship untenable. Lowered away the boats and they immediately commenced to fill, being perforated with shrapnel. . . . When we were close to the submarine one of the officers asked for the master. All my crew shouted that I was killed; he then called up my second officer and told him he wished to speak to him, and, as he was stepping on the submarine, smoke was seen, so they set away at once, full speed on the surface, putting five or six shots into the ship as they passed her. . . .

"I cannot speak too highly of my crew, which was composed of aliens. My engineers stuck to their work to the last, and Apprentice Sutcliffe, who had already been at the wheel for one hour when the action started, steered the ship with great coolness and pluck during the whole action, obeying my orders and carrying them out promptly."

Apprentice Thomas Sutcliffe, who stuck to the wheel during the four-hour engagement with shells bursting around him, celebrated his seventeenth birthday on being landed subsequently at Palermo.

Throughout the submarine menace courses the attention of masters and officers was particularly called to the importance of organising their ships' companies for action when resisting submarine attack, and the need for drills (which inculcate discipline) and for occasional practice firing. This was quite a new aspect of service in the Mercantile Marine, in which the system of discipline and conditions of service differed entirely from those obtaining in men-of-war, where fighting efficiency is the primary object both of the special training and of the rigid discipline enforced. In order to prepare the various ratings for the new work that they would be called upon to perform, if the weapons supplied were to be used to their maximum effect, the first

step taken was to appoint special officers and gunnery instructors to detail and to train the guns' crews ; a total of 532 officers and others were employed on this service.

As the number of defensively armed ships increased, and larger guns were supplied to them, requiring bigger guns' crews, a special scheme for training additional men of the Merchant Service in gunnery became imperative. There was a difficulty in finding gunnery instructors, but this difficulty was overcome when the Commandant of the Royal Marine Artillery at Eastney represented personally to the Director of the Trade Division that he had in his barracks a number of old pensioner gunnery instructors who were employed only on barrack duties.

It was decided to carry out the work at the Crystal Palace. Special drill sheds were erected there, and both guns and stores were hastily supplied for instructional purposes. Naval officers and Marine gunnery instructors were detailed by the Admiralty, and the first course was opened on April 30th, 1917, the men being obtained through the superintendents at the Mercantile Marine offices at the various ports. Only deck ratings, viz., boatswains' mates, quartermasters, able and ordinary seamen, were at first included. The courses lasted for fourteen days, and 200 could be received every week. Eighty-four joined the first class. The men were under naval discipline during the training, and when trained they were given certificates entitling them to 6*d.* a day whilst actually employed as members of guns' crews. Shortly afterwards, on May 8th, 1917, the scheme was extended to engine-room ratings, cooks, and stewards, and the accommodation and staff at the Crystal Palace were increased to enable an additional 200 to join weekly for instruction. Volunteers for the courses signed a special form of agreement, and were paid while under instruction at the standard rates current in the Merchant Service, the amounts being increased on April 8th, 1918, when the standard rates were raised. At first the men who volunteered to supply ammunition to the guns received no extra pay, but this was set right on February 6th, 1918, from which date these men were paid in the same manner as the guns' crews. The instruction covered sight-setting, working the " loader," gun drill, knowledge of the guns and mountings, and of the ammunition, as affecting the armament of defensively armed merchant ships. The courses were sus-

pended on October 23rd, 1918, by which date 8,507 ratings had been trained at the Crystal Palace R.N. Depot, which was under the command of Commodore Sir R. W. Bulkeley, R.N.R. The branch of the depot devoted to training merchant seamen was called the Mercantile Marine Gunnery Unit, of which the Commanding Officer was Lieut.-Commander R. C. Stevenson, R.N.V.R., and Lieut. G. H. Withrington, R.N.V.R., the Gunnery Officer, from whose account of the training and life of the merchant seamen under instruction the following particulars have been taken.

There being no age limit for men serving in the Merchant Service, no age limit was laid down for volunteers for the gunnery course at the Crystal Palace. The standard was one of physical fitness, rather than of age, and the rough-and-ready rule that was adopted was that if a man could handle the projectiles, weighing 45 lb., used in guns of 4·7-inch calibre, he was accepted for the course. The men were medically examined at the ports before they signed on; the examination was not a very strict one, and on arrival at the school they were examined again. With the exception of a very small number who refused treatment nearly all were accepted. The youngest, 15 to 16 years of age, were to be found amongst the boy cooks and stewards, who averaged about 17 years. Many of these had served five or six times in vessels which had been mined or torpedoed. An assistant steward, aged 14, who had been torpedoed four times, complained bitterly on being discharged as unsuitable for gun's crew work because of his poor physique. The firemen, greasers, trimmers, and deckhands varied in age from 22 to 45 years. The quartermasters and boatswains' mates were all staid middle-aged men, most of them with a lengthy and varied experience at sea, and nearly all "square-rig" men with plenty of common sense. They were classed as petty officers, messed and trained separately, and, as occasion demanded, placed in charge of parties cleaning the sleeping quarters before breakfast. The whole of the cleaning of quarters, messes, and batteries was done by the men undergoing instruction.

One quartermaster aged 72 had been torpedoed twice, and on the last occasion had spent six days and six nights in an open boat. He refused to undergo treatment for his feet, which had been frost-bitten, for fear that the result would be his discharge without obtaining a certificate.

Another wore the Distinguished Service Cross, awarded to him when serving as an officer in an action against an enemy submarine.

As the guns arrived at the Crystal Palace, they were mounted as quickly as possible, in one instance before the battery building had been completed, so that at the end of the war the mounting could not be passed through the door. When the men signed on for the course before the Superintendents of the Mercantile Marine at the various ports, they agreed to serve in the *SUNHILL* for fourteen days, that being the name of the ship bearing their names on her books. This led on at least one occasion to a little misunderstanding. A man lost himself on his way to join for the course, and kept the receiving Chief Petty Officer waiting for over an hour. When asked for an explanation by this Chief Petty Officer, who pointed to a big board with *H.M.S. SUNHILL* painted on it over his office, the man, after contemplating the board for some time, remarked: "Well. This is the first ship I've been in what ties up to a tree at night-time!"

The men were given free railway warrants to the Crystal Palace Depot from the ports where they signed on, and drafts were timed to arrive on Monday evenings, the first arriving on April 30th, 1917. On arriving, the drafts were mustered, given a meal, paid 5s. a head in advance, supplied with bedding and with canvas bags to keep their kits in, and allocated to their sleeping quarters. Next morning they were medically examined and supplied with uniform, which remained the property of men who qualified. They were then inspected in their uniforms, the Naval Discipline Act was read to them, and a short lecture was given on the need of obedience to orders, saluting the quarter-deck, and other conventions. After these formalities, the instructional course proper began after dinner at 1.45 p.m. As a typical story indicating the mental attitude of some of the men joining the classes, we can select the tale of a man who, after the reading of the Naval Discipline Act, called out, in reply to a question whether everyone understood it, "You said something about being shot. I didn't sign on to be shot!" After reading the clause again, the officer added, "If you deserted to the enemy, I should be very pleased to take charge of the firing party," to which the reply was, "Oh,

that will be all right then ! ” Later in the course, a man whose leave was stopped for a minor offence put in a request that he might forfeit two days’ pay instead of having his leave stopped because he had an engagement—to meet a girl.

Considerable care was taken in selecting the Royal Marine Gunnery Instructors in view of doubts expressed officially about getting merchant seamen to accept naval discipline, or to acquire any knowledge of gunnery. As matters turned out there were no difficulties at all. The men were reported on as the finest material that an instructor could have. They had all come to the school for one purpose only, to learn gunnery in order to “get some of their own back.” The high standard increased with the continual murders of seamen by leaving them in open boats with no food, placing them on the deck of a submarine which then dived, and such-like methods. As regards discipline, the gunnery lieutenant reported :

“From a navy point of view the discipline was lax. That is to say we did not insist on saluting superior officers, correct lashing-up of hammocks, saying ‘Sir,’ etc. etc., but we did insist on absolute discipline in the batteries during instruction. During the whole period of its existence the school had only two cases punished by warrant—one for theft, the other for giving false evidence at an enquiry ” (to shield a chum) . . . “Properly handled, the merchantman lends himself to training very easily, he settles down in new surroundings and under other-than-usual conditions, quickly. He objects strongly to having anything to do with any other officers than his own. This proved rather disturbing to officers of other units, who, because a man was in uniform, considered that he should be told to salute every officer religiously. In many instances, when picked up, the M.M.G.O. said, ‘I don’t belong to you, I’m a M.M.G.O. man.’ ”

In the ammunition lecture-room, the men were shown specimens of all ammunition carried in defensively armed merchant ships and taught how to handle it ; and the use of smoke-producing apparatus, with the preparations required, was also explained. In the sight-setting room actual gun-sights, one to every two men, were used, and the class was exercised at sight-setting, including rapid

alteration of sights for working a bracket, or for ascertaining ranges. The bracket system of finding range and deflection was expounded. One little incident is worth recording. At gun-drill the sight-setter alters the sights for spotting corrections, and the gunlayer then relays the gun. On one occasion, when the sights were altered, the gunlayer "punched the sight-setter in the mouth." When asked why, he explained that the man had been "mucking about with his sights."

For instruction in gunnery, the men were formed into classes of from ten to fourteen, the same instructor taking his class through all the subjects in the course. The object was to give the classes plenty of drill in loading the guns and howitzers rapidly and correctly, no attempt being made to teach the men to be gunlayers, beyond the amount of knowledge of the duties to be learned during the ordinary course of drill. Instruction began at 9 a.m. daily and continued until 12.15, with a short interval between 10.30 and 10.45. Instruction in the afternoon was from 1.45 to 4.30 p.m. The men were free to leave at 5.30 p.m., returning at 10 p.m. unless special leave had been obtained to stay out later. Week-end leave was granted from 1 p.m. on Saturdays to 7.30 a.m. on Mondays to any men who had not previously overstayed their leave. Those who remained at the Depot were free to go where they liked from 1 p.m. on Saturday until midnight, and on Sundays from after dinner, which was at noon, until 10 p.m. On the last Friday of the course, men who thought that they had an aptitude for sight-setting were specially tested, and, if they passed the test, their certificates were endorsed accordingly. On the last day of each course there was a special competition at the "loading-teacher" which always raised keen enthusiasm, each class entering two or more crews. Owing to the shortness of time available, to the nature of the men composing the classes, and to the material which they were to handle, the nature of the training was considerably altered to suit the special conditions. It was commonly called in the Depot "Up-and-at-'em drill," and looked at somewhat askance by R.N.V.R. ratings undergoing the regular courses in gunnery at the Crystal Palace in order to prepare for service in the fleet. At 4 p.m. on the concluding day of the course the men were paid, returned their bedding,



TOUGH NUTS.

[Copyright, Imperial War Museum.]

and got out of uniform. At 5 p.m. they were given their free railway tickets to the ports of their selection, gunnery certificates, and other papers, instructions about how to sign on as guns' crews, and a few words of advice and good wishes from the Commanding Officer or Gunnery Officer. Without exception the classes left with hearty cheers for the Staff and Instructors.

On the system previously outlined, the men came back to requalify after twelve months, many of them wearing the Distinguished Conduct Medal for service in action. No regular record was kept at the Crystal Palace of the number of times individual men had been torpedoed, but as many as five duplicate gunnery certificates were issued to several men who had not time to get the originals when their ships were sunk, and when special badges for undergoing this experience were issued by the Board of Trade, one man at the school applied for eleven of these badges, and two other men for ten each. An officer who was on the staff of the school estimates that the average number of torpedoings would be at least one per man. When the First Sea Lord (Admiral Jellicoe) inspected the school, he went down the ranks of one class asking the men how many times they had been torpedoed. Beginning at the right-hand man the answers were: 1. "Seven times, sir." 2. "Twice, sir." 3. "Four times, sir." 4. "None, sir, I've only been mined."

In a typical merchant ship the stations for the ship's company in the event of submarine attack are shown below:

Gun's crew.—Second officer, 3 gunners, 2 certificated seamen.

Ammunition Supply.—3 certificated men, 8 stewards.

Fire Party.—Third officer, plumber, joiner, boatswain's mate, and starboard watch.

Ambulance Party.—Doctor, 6 stewards.

Provision and Clothing Party.—8 stewards.

Signalling Party for Boats.—Fourth officer, 3 quartermasters, 2 boat-deck men.

Notes.—Firemen and trimmers off watch proceeded below to assist in maintaining steam. The signal for the crew to proceed to the above stations was continuous groups of three short blasts on the whistle. The signal to abandon ship was alternate long and short blasts, blown continuously.

The allowance of projectiles was 50 common shell and 10 practice shot for guns of 4-inch calibre and above, 100 common shell and from 10 to 16 practice shot for smaller guns.

Just before a vessel sailed, a gunner's mate from the local D.A.M.S. Staff visited her, ascertained that all the equipment, etc., in charge of the gunlayer was correct, and, by arrangement with the Captain, had the crew mustered, selected those holding Crystal Palace certificates, and made up the gun's crew, choosing as sight-setters those who had their certificates endorsed as above described. Such gun drill as was possible before the ship sailed was then carried out.

Five practice rounds per gun were fired as soon as practicable after the gun was mounted, and five rounds every month afterwards. With howitzers and bomb-throwers ten rounds were fired every three months. This practice was forbidden in home waters, where only percussion tubes were fired, aiming drill being carried out at the same time. Casks or boxes were used as targets for the firing, care being taken to remove lettering and labels, which might have furnished the enemy with information, if picked up.

An idea of the variety of ordnance supplied to the Merchant Service, and of the resulting complications in handling, ammunitions supply, and drill, may be gathered from the following statistics, which are in amplification of those furnished in the preceding chapter :

Ordnance Mounted in D.A.M.S. on November 16th, 1918.
 —137 6-inch, 715 4·7-inch, 1,060 4-inch, 99 18-pounders, 56 15-pounders, 11 14-pounders, 282 13-pounders, 83 3-inch H.A., 24 12-pounders of 18 cwt., 1,321 12-pounders of 12 cwt., 16 12-pounders of 8 cwt., 140 6-pounder Hotchkiss, 5 6-pounder single tube, 118 3-pounder Vickers, 262 90 m/m French guns, 674 7·5-inch howitzers, and 34 10-inch "bomb-throwers." Total, 4,329 guns, and 708 howitzers and bomb-throwers. *Grand total, 5,037*, in addition to 1,711 lost through war or marine casualties.

The value of defensive armament, and training in its use, in its influence upon the enemy on the one hand, and upon the British merchant seamen on the other, was amply demonstrated. The German submarine com-

manders showed a steadily increasing respect for the efficiency which these men, previously untrained for war, gradually acquired. This matter is capable of proof.

The Admiralty, as we have seen, were hard put to it at first to find suitable guns, and they were compelled to issue the few, generally of small calibre, that were available. The unsuitability of this light armament was fully recognised, but it was realised that any form of gun was better than no gun at all. The national and private gun-making resources were working under tremendous pressure at the time to meet the demands of both army and navy, but, as soon as circumstances permitted, the weapons of small calibre in merchant ships were gradually replaced by more powerful ordnance. Statistics are available which furnish conclusive proof of the success of the policy which was adopted, and of the results of the fine fighting spirit exhibited by the officers and men of the Merchant Service. Instead of fighting on the surface, using their guns, the hostile submarines were soon driven under water and compelled to resort to their torpedoes, which were limited in number and very costly. During the height of the submarine campaign (April 1917) the number of gun-attacks upon British steamships numbered 46 per month, representing 29·7 per cent. of the total attacks. During the last three months of the war the number had fallen to 4 per month, representing 6·9 per cent. of the total attacks on British vessels. The following table is of interest in this connection :

GUNFIRE ATTACKS ON BRITISH MERCHANT SHIPPING, 1917-18

Three months ending	No. of Vessels armed.	No. of Gunfire Attacks.	Percentage	
			Of total Attacks.	Resulting in loss or damage.
April 1917 .	2,100	138	29·7	32·0
January 1918 .	3,300	19	6·6	15·8
October 1918 .	4,200	12	6·9	25·0
February 1917 } to October 1918 }	—	368	15·8	29·3

Although very few foreign merchant ships were armed, it seems certain that foreign shipping benefited indirectly from the armament of British vessels. The mere fact that so large a proportion of the ships at sea carried guns

caused the enemy to exercise considerable caution before attacking merchant ships, which had previously been entirely at his "mercy"—a quality seldom exercised. The figures for foreign merchant shipping attacked, during the period for which the British figures have already been quoted, were :

GUNFIRE ATTACKS ON FOREIGN MERCHANT SHIPPING, 1917-18

Three months ending	No. of British Vessels armed.	No. of Gunfire Attacks.	Percentage	
			Of total Attacks.	Resulting in loss or damage.
April 1917 .	2,100	127	40.1	91.3
January 1918 .	3,300	26	14.5	73.1
October 1918 .	4,200	23	22.3	52.2
February 1917 to October 1918 }	—	374	27.6	78.9

As the number of guns increased and British merchant seamen became more expert in their use, the German submarines showed an increased reluctance to break surface and to expose themselves to the resultant risk. During the first six months of the unrestricted submarine campaign, the submarine was seen before she attacked in 41 per cent. of the actions. During the last twelve months of the war the proportion had fallen to 24 per cent. Further statistics which bear upon this matter indicate clearly the practical value of defensive armament and effective lookout, combined with training in gunnery and in handling vessels in action. They give the percentage of armed merchant ships sunk or damaged (i.e., hit by gunfire) to the numbers attacked under various conditions.

EFFECTIVENESS OF DEFENSIVE GUNFIRE

Period.	Percentage of Successful Attacks.					
	Gun not used.	Gun used.	Submarine not seen before attack.	Submarine seen before attack.	Submarine not seen, gun not used.	Submarine seen, gun used.
February to July 1917 .	75.0	23.8	78.5	25.9	83.1	19.1
September to November 1917	75.9	24.1	81.7	17.4	82.4	13.6
June to August 1918	77.4	17.6	75.0	32.4	77.7	12.0

The difference in the proportion of enemy successes when the submarine was not seen before she attacked, and when the submarine was seen and defensive action was taken is notable—in the later period 77·7 per cent. of attacks resulted in loss or damage in the one case, and 12·0 per cent. in the other.

More complete practical proof of the value of defensive armament, as handled by the trained officers and men of the British Merchant Service, could hardly be furnished.

The submarine mine, laid secretly in the highways of sea-traffic, presented to the merchant shipping of all nations a peril even more deadly in certain areas than that caused by the intensive submarine campaign. In the preceding chapter some account has been given of the otter apparatus, which enabled merchant vessels to pass safely through minefields. The apparatus would have been useless unless it had been properly handled, and this required some training in its nature and practice in its employment. To ensure correct fitting, the Paravane Department of the Admiralty arranged for instruction to be given at Portsmouth free of charge to representatives of Messrs. Vickers, who were charged with the responsibility for supplying and fitting the otters. About fifty officers of the Royal Naval Reserve were then put through a course of instruction in handling the otter, to enable them to superintend the fitting, conduct trials, and impart instruction to the personnel of the Merchant Service, to whose charge the appliance would be entrusted when in operation at sea. These R.N.R. officers also made the necessary arrangements for at least one officer in every merchant ship to attend a one-day's course of instruction in the training-ship *Accrington* at Portsmouth, where they attended lectures in the forenoon, and in the afternoon saw the moorings of dummy mines being actually cut by the use of the otter. As many as fifty masters and mates were sometimes attending on the same day. Altogether about 6,000 officers of the Merchant Service went through the courses at Portsmouth, and there became convinced of the utility of the otter for the purpose for which it was designed.

The apparatus required careful handling. The otters were slung to special gallows on both bows and attached to inhaul wires. There was a heavy strain on the towing

wires, when going at any speed. These were attached to a special fitting in the bow of the ship, fixed if necessary on a prolongation of the stem to ensure that the moorings should be cut of any mines which, owing to her draught, the vessel might strike. On account of the great wear and tear on the towing wires, it was necessary that the otters should be kept in operation only when in the danger areas. When hoisted in, the towing wires were raised by special chains, attached to the fitting on the stem. The operations required, besides good seamanship and special training, a considerable amount of labour on the part of the small crews of merchant ships, but this work was amply repaid. For example, the master of the hospital ship *Goorkha* reported to the Managers of the Union Castle Line that on November 8th, 1918, her otters cut a mine's moorings by daylight off Kavala. The mine was seen on the surface lying harmless, clear of the ship's side. On November 14th the *Goorkha* passed safely through a minefield, cutting the moorings of three more mines. The report of her master gives us some idea of the nerve required of our merchant seamen and the care which they took of the device under their charge when passing through minefields at high speed. The following is an extract :

“The last minefield I passed through, in daylight, the otters cut adrift three enemy mines (in 15 minutes) which came to the surface just abaft the bridge. In dangerous areas, especially such as we have to traverse just now, the otters are more than ever necessary.” “Look-outs are placed in Nos. 5 and 6 boats to watch the water-surface above the otters. The patients (who are able) are kept on deck with life-belts on, and the crew also, as far as possible. The tremendous tearing sound and vibration caused by the mine-moorings wire rushing along the otter towing wire does not leave many of the crew in their quarters forward, and is felt quite strongly on the fore-castle head.

“In the event of getting among mines, I see nothing for it but to steer a straight course, full speed if possible, as slowing down too much, or stopping, brings the otters to the surface, where they are useless, and turning under helm renders the stern liable to strike a mine, which the

otters have cut adrift. The very hard steel cutting-teeth in the jaws of the otter show little or no signs after cutting mine-wires, although, in one case, portions of the wire were found in the jaws, and in another a length of wire and the depth-nipper were brought on board with the otter. In another instance the port otter refused to work and came alongside ship, when it was found on hoisting it out of the water that, though it had cut the mine adrift, it had fouled the wire with some anchoring arrangement attached. The wire was cut with an axe and the otter freed. In most cases, the mines cut adrift by the *Goorkha's* otters have very shortly afterwards been sunk by gunfire. In the Mediterranean from June 28th to November 17th, 1918, the ship steamed 1,594 hours, during which time otters were in use 361 hours."

The *Goorkha*, as has been noted, was a hospital ship. She was at that time employed on voyages in the mine-infested waters of the Ægean Sea. Her master's report gives us some idea of the constant strain brought by the peril of passing through minefields upon the officers and crews of the Merchant Service, and helps us to realise the work done by them in handling the otter apparatus so as to run their vessels even through minefields. Before the days of the otter, about 18 vessels per month were being sunk by mines. After the otters were fitted this figure dropped to three or four, and no merchant ship so provided was sunk by a mine. The work to be done by the crews included lowering the otter towing-wires, by an arrangement of double chains, to the point of attachment fixed below the water to the ship's stern, and then hoisting out the otters by means of davits and derricks fitted on deck, the reverse process being pursued when getting in the otters. These operations had to be constantly repeated on reaching and on quitting the danger areas. The areas where the largest number of mine-moorings were cut by British merchant ships using this apparatus were situated near the United Kingdom and in the Mediterranean, but there is an instance on record of a mine-moorings having been cut off Sierra Leone on May 10th, 1918, and another off Long Island, New York, on September 29th of the same year.

We are now in a position to picture to ourselves the

British Merchant Service, during the fateful years 1917 and 1918. They were defending themselves by gunfire and howitzer-fire, by smoke-screens, camouflage, and other devices against gun or torpedo attack in the ruthless U-boat warfare, and they were facing the ordeal of going full-speed through minefields, trusting in others for protection against this deadly and insidious danger. To make themselves efficient in the performance of these new and unexpected duties, they took every advantage of the facilities which were afforded.

Excluding the gunnery and other training given to the crews of the Merchant Service on board their own vessels, we have arrived at the following totals of the numbers of those of all ranks who were given special training on shore, in the United Kingdom and abroad, to meet the menace of submarine and submarine mine :

Submarine menace courses for Officers :			
U.K.	.	.	10,226
Abroad	.	.	1,118
			11,344 attendances.
Otter courses for Officers (U.K.)			6,000 „
Gunnery course for Cadets and Apprentices :			
U.K.	.	.	1,300
Port Said	.	.	114
			1,414 „
Gunnery course for Volunteer Ratings :			
Crystal Palace	.	.	8,507 „
Total			<u>27,265</u> „

We must also take account, in addition to these figures, of the lectures given, from May 1918 onwards, in London, Newcastle, Hull, and the Bristol Channel ports, to all pilots on the methods of dealing with the submarine menace. These lectures were given by the R.N.R. officer instructors of the D.A.M.S. Service, after communications had passed on the subject with Trinity House.

The instruction so far referred to was directed towards securing gunnery efficiency and safety from minefields in individual ships. In connection with the assembly and manœuvring of vessels in convoys, for combined action between individual merchant ships, and between them and men-of-war or shore signal-stations, efficiency

in signalling also required constant attention and improvement.

Under the system first established, the officer instructors to whom we have referred took naval signalmen with them on their visits to merchant ships, and these signalmen gave instruction to the ratings concerned. This proved a wasteful arrangement, and in May 1917 the officer commanding Defensively Armed Merchant Shipping at Liverpool established a signalling school there for merchant seamen. Later on this school granted proficiency certificates, which had the effect of popularising the courses there. The standard of proficiency was slightly higher than that comprised in the Board of Trade Masters' certificate. By the end of the war the Liverpool school had granted 47 of these proficiency certificates, and eventually the attendance at the school reached a weekly average of 150. Newcastle, taking Liverpool as a model, established a similar school in January 1918.

To meet further needs, signal courses for officers of the Merchant Service were instituted at all the great shipping centres in the United Kingdom. From December 1917 onwards masters, officers, and others joined a signal-instruction class which was held daily at Port Said for convoy signalmen, under the supervision of a signal mate, R.N. From February 1918 onwards another signal school was established at Bombay, with the primary object of instructing officers of the Merchant Service.

Such, in brief terms, were the facilities put by the Admiralty at the disposal of British merchant seamen to enable them, after the outbreak of war, to train themselves to defend their ships against the ruthless and desperate attacks of the enemy. The casualties to the guns' crews in British merchant ships in action numbered in killed 694, wounded 62, missing 27, prisoners 74, a total of 857. That figure represented 7·4 per cent. of the numbers borne. Over 55 per cent. of the men in the trained guns' crews served in vessels which were attacked or sunk by the enemy.

That the merchant seamen made good use of the instruction in fighting qualities and of the weapons provided for them may be illustrated by examples taken at random from the records. Although it occurred comparatively late in the war, we will cite first the gallant little action fought by two small sailing vessels, the *Mary Sinclair*

(118 tons gross) and the *Mary Ann Mandal* (112 tons gross), on March 23rd, 1918. These were two small craft carrying coal to France. At 6 o'clock on a calm morning, with scarcely enough breeze to give steerage way, they were attacked with rifle-fire from a German submarine about 8 miles S.S.W. from Brighton. The submarine was a large one, carrying a 4-inch gun, and the hull, conning tower, and periscope were plainly visible. The *Mary Sinclair* carried two 12-pounder guns, the *Mary Ann Mandal* two 3-pounders, and they at once used them. By the time each had let off two rounds, the submarine dived and disappeared. After about an hour they were again attacked, this time by gunfire, at a range of about 3 miles. Both vessels took up the challenge and fired 108 rounds between them, the submarine firing between 50 and 60 rounds from her heavier gun. Things began to look so bad for the little sailing craft that the sailing orders and confidential blue-book were burned to prevent their capture. The *Mary Ann Mandal* received five hits by shrapnel and one by a shell. Her main topmast was shot away, and there were holes in her deck and sails. So the unequal combat continued until, at about 8 a.m., the trawler *Wilket* came upon the scene, and the submarine again dived. The schooners were brought safely into harbour.

We can take another example, that of the *Bellorado* in the Mediterranean in February 1917. This vessel was carrying a valuable cargo of 5,959 tons of coal. During the afternoon watch a look-out man saw something strange, which he took to be a periscope, just disappearing. From that time onwards a special look-out was kept by the master and the chief officer, who were both on the bridge. About three-quarters of an hour later a submarine appeared on the port quarter of the *Bellorado*, which was going at a little over 10 knots at the time, and just finishing a zigzag. The impression conveyed was that the submarine's captain had intended to come up abeam, and found himself, to his surprise, about two miles astern. He at once opened fire, but did not score a hit until about the fifteenth round, other shots landing from a cable to half a cable ahead. The master of the *Bellorado* had also given orders to fire, and good practice was made from the outset, one shot landing just at the submarine's stern,

apparently scoring a hit. Then the *Bellorado* was hit twice, one of the shots striking the wheelhouse, killing the master, chief officer, and an A.B., who was steering, destroying the compasses, and disabling the steering gear. The other shot struck the galley, and wounded three men. Meanwhile the gun's crew kept up an accurate fire, and the second officer, who was passing ammunition from the magazine to the gun, heard one of the crew call out that the submarine had been hit. He came up, had a good look at her, and decided that the submarine was going down by the stern. Going up to the bridge to report, he found the bodies of the master and chief officer, and realised that, the steering gear being out of order, the vessel was describing a circle. The third officer, on his way to the bridge from the wireless cabin, saw a shell hit the submarine just below the conning tower, making her "quiver a bit," sink by the stern, and go under, stern first, at an angle of 15–20 degrees, firing a final shot, at 5.20 p.m., just as she went under.¹ After adjusting her steering gear, the *Bellorado* reached Malta in safety. She had been saved by good gunnery.

Such was the spirit of the Merchant Service in applying the lessons learned at the courses herein described. Unless this fine spirit had been displayed, no system of instruction could have produced the end in view, the defence of the important interests, vital to the cause of the Allies, which were entrusted to British merchant seamen.

¹ The sinking was classified at the time as "possible," but no submarine was sunk in the Mediterranean in February 1917.

CHAPTER VI

THE INTENSIVE SUBMARINE CAMPAIGN (II)

May—June 1917

THE unrestricted submarine warfare, which commenced in February 1917 and represented Germany's last reckless throw for victory, had attained, as described in an earlier chapter, the highest point of its success in April, and from that time onward, with one or two slight set-backs, its toll of merchant shipping was steadily diminished by the counter-measures adopted by Great Britain and her Allies. While in April 155 British merchant ships were lost through submarines, the number in May was only 106. The losses in tonnage fell from 516,394 in April to 320,572 in May, and the loss of life from 997 to 507. The June figures were slightly higher than those of May for loss of tonnage, but, happily, not for loss of life; and the figures for July and August were not so very greatly lower than those for May; but in no month before or after did they approach anywhere near the losses in April.

May opened badly, with no fewer than eleven vessels sunk on the 1st, and ten on the 2nd of the month. The *San Urbano* (6,458 tons), the *British Sun* (5,565 tons), the *Tela* (7,226 tons), and the *Troilus* (7,625 tons) were the largest of these vessels, while the sinking of the *Bagdale* (3,045 tons) was responsible for the greatest loss of life—twenty-three persons, inclusive of the master. The *Warnow* (1,593 tons) had a complement of twenty men on board, of whom fourteen, including the master, were either killed by the explosion when she was torpedoed or drowned. The chief officer and five of the crew managed to keep themselves afloat on an upturned boat. When the submarine came to the surface, they asked for assistance, but the commander replied that he would see them hanged before he would help them.

On the 5th the *Feltria* (5,254 tons) was torpedoed, as usual without warning, off the S.E. coast of Ireland.

The explosion blew all the port-side boats to pieces. The lives lost numbered forty-five, including the master. The starboard boats were lowered, and the wreckage of the port boats was cut away, and altogether twenty-one survivors were picked up next morning. Among these was the fourth engineer. While swimming from the wreck, he had been picked up by the submarine and asked the usual questions about his ship, and then, with what the submarine commander evidently thought unusual consideration, brought within about twenty yards of the nearest boat and made to jump back into the sea. Being already quite exhausted, he would certainly have been drowned but for the *Feltria's* quartermaster, who left some wreckage, to which he was clinging, and supported him until the boat could reach them.

On the previous day the troopship *Transylvania* (14,315 tons) had been sunk by a torpedo in the Gulf of Genoa with a loss of over four hundred lives, and the *Pilar de Larrinaga* with a loss of twenty. In both these cases the master was among the drowned.

On May 6th the master (Mr. G. Dobbie) of the *Countess of Mar* (2,223 tons) sighted a submarine about 300 feet away on the starboard bow. He promptly headed for it, and passed over it, doing considerable damage. There was a very heavy sea running, and he took great risk in ramming the submarine. For his prompt action he received the D.S.C.

The same award was made to Mr. W. T. King, master of the *New Abbotshall* (783 tons), which on the following day was chased by a submarine in the North Sea, when on voyage from London to Kirkcaldy. He used smoke apparatus successfully, and, though only carrying a 6-pounder gun, returned the submarine's fire, scoring a hit which caused the chase to be abandoned. In this case the gunlayer, J. Kay, R.N.R., also received well-deserved mention.

The *Locksley Hall* (3,635 tons) left Port Said on May 7th with a crew of sixty-two all told, of whom fifty were Indians. No vessel was sighted during the voyage, and by noon on the 12th she was about thirty miles from Malta, where she was to call for coal. The master (Mr. Alexander Gardner) was in the chart-room when he heard the second officer give a sudden order to the helmsman to

“hard-a-port,” and at once going out on the bridge saw the wake of a torpedo coming directly towards the ship. No periscope was visible, but in a moment the ship was struck in the engine-room, and the fourth engineer and five of the engine-room crew were killed outright. The native members of the crew were panic-stricken, and without stopping to pick up their lifebelts rushed the boats, refusing to get out of them, so that they had to be lowered by the master and the officers. When he had ascertained that all had come up from the engine-room, the master sent the officers away with the boats, and remained on board for a while destroying the ship’s papers. He then found that the port dinghy was still hanging in the davits, with some natives in it, and the chief steward standing by ; with some difficulty this was lowered, and he got into it. Captain Gardner was fully determined not to be taken prisoner, so he pulled round to the other boats and warned them not to give him away if the submarine came to the surface and asked questions. To assist matters, he discarded his uniform coat and cap, and covered his face with coal dust. The submarine duly emerged a quarter of an hour later, and her commander, believing that the master had been killed by the explosion, amused himself by taking a photograph of the survivors in the boats, and, after firing a few more shots into the *Locksley Hall* to ensure her sinking, departed. In the afternoon of the next day the survivors were picked up by a motor launch and landed at Marsa Scirocco.

On May 9th the quick eyesight of a cadet named Lewis, who alone of all those on watch perceived the wake of an approaching torpedo, followed by the equally prompt action of the second officer in ordering the helm about and full speed ahead, saved the *Malda* (7,884 tons), by the narrow margin of a few feet, from being sunk in the North Sea. The master (Mr. W. Buswell) and two other officers were on the bridge, and look-out men were posted at four points of vantage in the ship, but in the difficult light of the spring day none of these descried the coming peril till it would have been too late to avert it.

On the 13th and the 14th respectively, the *Neilrose* (3,568 tons) and the *Volga* (4,404 tons) were both attacked by submarines, and both escaped. At 11.15 a.m. on the earlier date, Mr. Joseph Browne, master of the *Neilrose*,

sighted the boats of the *Jessmore* (3,911 tons) which had been torpedoed half an hour before. He picked up the crew, and hoisted in two of the boats, in case they might come in useful later. While doing so, he noticed some more boats, loaded with men, on the horizon. He was about to go to their assistance, when the submarine appeared between the *Neilrose* and the boats. Fire was immediately opened, and the second round went so close to the submarine that she dived. The rescue of the distant boats, however, had to be abandoned for the time, and the *Neilrose* pursued her voyage. Half an hour later the periscope of the submarine was sighted, and a torpedo was narrowly avoided by the prompt use of the helm. A shot was fired at the submarine, which was not seen again. The master of the *Neilrose* reported the position of the boats to a patrol vessel, and reached Liverpool safely with the crew of the *Jessmore* on board.

The *Volga* (master, Mr. John MacMillan), on a voyage from Karachi to Marseilles, was struck when near the Straits of Messina by a torpedo on the starboard side amidships. As the water was gaining rapidly, it was decided to try to beach the vessel at the nearest practicable point. At 5.50 a.m. on the 14th the submarine emerged and commenced shelling her. The *Volga* returned the fire as long as her ammunition lasted, but was hit several times while she was making slowly for the shore. About 6 a.m. she was successfully beached, and both anchors were let go. The ship was on a sandy bottom, about 300 yards from the shore, hard aground forward but waterborne astern, and she and her cargo were therefore in safety as far as it was possible to put them. The master decided that it could serve no useful purpose to continue exposing his men to the enemy's fire, so he and his officers and crew kept watch on the steamer from the boats and from the shore, until the submarine ceased shelling and departed. They then returned on board and retained possession. In the case both of the *Neilrose* and the *Volga* the D.S.C. was awarded to the master.

On the 16th the *Middlesex* (8,364 tons), a new steamer of the Federal Line, was sunk in the Atlantic without loss of life; and on the same day the *Pagenturm* (5,000 tons), the *Highland Corrie* (7,583 tons), and the *Kilmaho* (2,155 tons) were all torpedoed, with a total loss of thirty

lives. The *Crown of Leon* (3,391 tons) was struck by a torpedo while stranded off Albenga in the Gulf of Genoa. The periscope of the submarine was sighted about 1,200 yards away, and firing was at once commenced from the ship, the second shot apparently taking effect. The submarine approached nearer, and partly emerged, but appeared to list heavily and to be out of control. She dived after a few more shots, and did not reappear. One Italian on board the *Crown of Leon* was killed, and the chief officer and wireless operator were both wounded, when the torpedo exploded.

A fight to a finish, which lasted for two hours, took place on the 20th, between the *Caspian* (3,606 tons) and a submarine, off the coast of Spain. Unhappily the *Caspian's* 13-pounder was outranged by guns of the submarine, and while the ship was hit eight times and suffered heavy damage, she expended all her own ammunition, 100 rounds, without ever reaching her opponent. The master (Mr. Alfred Dowse) and five of the crew were directly killed by gunfire, and altogether twenty-five lives were lost, including some firemen who died from exposure in the boats. The chief engineer, and second officer and a gunner were made prisoners, and the ship was finally sunk by a torpedo.

On the afternoon of the same day two vessels were sunk within a few minutes of one another, in circumstances of even more than usual brutality and callousness. The *Tycho* (3,216 tons) was torpedoed first, at 5 p.m., and the abandonment of the ship was safely accomplished without casualties. The *Porthkerry* (1,920 tons) had seen the explosion, and was standing by about 200 yards away on the port beam. Just as the *Tycho's* boats came alongside her, a second torpedo was discharged by the submarine. This blew up one of the boats, killing the master and fourteen men, and capsized the other boat. The *Porthkerry* was abandoned with eight casualties, the vessel going down three minutes after being struck. The survivors from both ships were picked up by a small coasting steamer, and landed at Newhaven. The U-boat commander could easily have torpedoed the *Porthkerry* before the *Tycho's* lifeboats reached her, but he deliberately waited, and killed fifteen men without either necessity or excuse.

In the early hours of the next day the *City of Corinth* (5,870 tons) passed the Scilly Isles, and by the afternoon

was within about twelve miles of the Lizard. She was bringing a cargo of rice and other commodities from China and Japan, and was manned by a crew of sixty-eight all told, of whom thirty-six were Lascars and eighteen Chinese. In addition to the officer of the watch and the ordinary look-out, the whole of the deck hands were distributed round the decks, scanning the surface of the sea for any sign of danger. In spite of this watchfulness a torpedo struck her without warning of its approach. Four boats were at once lowered, and the Lascars and Chinese crew were ordered into them. The chief engineer remained below at the engines, and the third engineer went to the gun. The second and fourth engineers, who were both ill, were put into the boats. The master (Mr. C. S. Nelson) decided to make for land. Finding his ring to the engine-room answered by the chief engineer, he ordered full steam ahead. The chief engineer had meanwhile shut the tunnel door, and started the pumps; and the wireless operator had sent out the position, and received an answering message that help was coming. Before long the engine-room became flooded, and the chief engineer was forced to come on deck, and was sent to one of the boats. The ship was now sinking, and when the after deck was only a foot above water, the boats were ordered to stand clear, about 200 yards away. Nine men were still on board—the master, the chief officer, the Marconi operator, and the guns' crew. Suddenly the periscope of the submarine was seen quite near the boats. A shot was immediately fired at it, and almost at the same moment a second torpedo struck the vessel in the engine-room. From his boat the chief engineer quite plainly heard the rush of air as the torpedo left the tube. The nearest boat then went alongside the ship, and took off the master, and the eight men who had stayed with him till the last, and the *City of Corinth* turned over and sank just as they pulled clear. A patrol arrived later, and landed the whole complement at Falmouth.

On the 25th there was heavy loss of life by the torpedoing of the *Kohinur* (2,265 tons), which took place without warning in the Mediterranean, north of Alexandria. The master and thirty-six of the officers and crew were sacrificed. The next day, the 26th, was marked by two especially notable outrages, the sinking of a hospital ship, the *Dover*

Castle, and cruel firing on a boat-load of the *Umaria's* officers and men, after their ship had been disabled.¹

At 6 a.m. on the 26th a submarine fired on the British India Company's Steamship *Umaria* (5,317 tons), in the Gulf of Policastro, off the coast of Italy. The ship was armed with a 12-pounder, and at once attempted to reply. After five rounds, the gun was rendered useless by the breaking of its striker, and the ship had only its smoke-bombs to depend on. Soon afterwards the steering gear was disabled by a shell, and the vessel became unmanageable. One of the submarine's first shells had killed a native seaman, and wounded several firemen and a cadet; another destroyed No. 3 lifeboat, and killed a native who was hiding in it. The fourth engineer had his thigh broken, and the master (Mr. G. McT. Symmers) was wounded in the left shoulder. Distress wireless signals produced no reply, and about 7 p.m. it was decided that the ship must be abandoned. The three remaining lifeboats were sent away, and the gig was ordered to keep out of the line of fire till the master and those left in the ship were ready to embark. The submarine commander then deliberately fired on the gig, riddling it with holes, and severely wounding all but one of those on board it, including the fourth engineer, already so badly injured. In spite of this, the gig reached the ship's side, and the master and the rest got in. They were then signalled alongside the submarine, and the chief engineer was made prisoner in lieu of the master, on account of the latter's wounds. The boat was half full of water, red with the blood of wounded men, whose injuries there was no means of dressing, and she had to be continually baled, while only three of those on board her were still capable of handling an oar at all. The sufferings of the wounded were terrible; and it was not till 2.15 p.m. that a small rowing boat of the Italian coast-guard took them in tow, and brought them to a patrol boat, in whose charge the three lifeboats already were. They were landed at Sapri, and there everything possible was done for them; but meanwhile the fourth engineer and one of the firemen had died of their wounds, and all had endured protracted agonies.

One more instance of extreme barbarity, accompanied by great loss of life, occurred in the last week of May.

¹ For details of attack on the *Dover Castle*, see pp. 319-20,

The *Clan Murray* (4,835 tons) on the 29th was about thirty-five miles from the south-east coast of Ireland, when she was torpedoed amidships and sank within five minutes. The whole of the crew of seventy-eight were in the water, with nothing but floating wreckage to cling to. The submarine circled round them, and picked up the third officer as prisoner, but made no effort to assist the others. One man who actually reached the submarine was kicked off and drowned. A dozen survivors succeeded in keeping themselves afloat till they were rescued six hours later, but sixty-four lives were lost, including the master.

On the 30th the *Bathurst* (2,821 tons) and the *Hanley* (3,331 tons) were off the coast of Ireland, homeward bound, in company; the *Bathurst* being unarmed, and the *Hanley* carrying a gun. The master of the *Bathurst* (Mr. J. W. Jones) and his second officer were on the bridge, and all the deck hands were on duty looking out. No submarine was sighted, but at 2.15 p.m. the *Hanley* was torpedoed and abandoned. At 2.50 p.m., when the distance separating the vessels was about three miles, the submarine emerged, and began firing on the *Bathurst* from about 2,000 yards. She quickly got the range, and the *Bathurst* also had to be abandoned. While Captain Jones was alongside the submarine, being interrogated as to the two vessels, the German commander learnt that patrol boats were approaching, and cut short the conversation. After firing a torpedo each into the *Bathurst* and the *Hanley* from close quarters to ensure their sinking, he disappeared, heading for the Atlantic. The patrol boats gave chase for a while, and then picked up the two crews and took them to Penzance.

As some set-off to these disasters the exploits of three merchant vessels during the last days of this month may be recorded. On the 27th the *Meaford* (1,889 tons) sighted an enemy submarine breaking the surface 300 yards away. The master (Mr. G. C. Dusting) opened fire at once with his 12-pounder; the second shot carried away the periscope, and the third shot hit the conning-tower. No more was seen of the submarine except a large cloud of thin blue vapour hanging over the spot.¹

On the 29th Mr. G. Moir, the master of the *Hyson* (6,608 tons), caught sight of a periscope about 1,000 yards

¹ She was not, however, sunk.

distant, and headed for the spot; in a few minutes the periscope was seen about thirty feet from the port bow. As the ship passed over the place a heavy commotion and swirl was observed in the water abreast the bridge, but no bump was felt. Two or three minutes afterwards, the conning tower, without periscope, came to the surface about 600 yards astern of the *Hyson*, the bow of the submarine rising high in the air. Captain Moir received the D.S.C. in recognition of the zeal and determination he displayed, and the submarine was afterwards attacked by a seaplane, but not sunk.

Another notable incident at this period of the struggle occurred on the 30th. The *San Ricardo* (6,465 tons), an Eagle oil transport, was returning in ballast from Liverpool to Mexico, when a submarine opened fire upon her from a range of nearly five miles. Mr. W. H. Luya, the master, acted with determination and discretion, and withheld the *San Ricardo's* fire for more than two hours, until the range had been reduced to about 6,600 yards. At 8 p.m. he opened fire, and so accurate was the shooting that after the third round the submarine dropped astern and gave up the pursuit. The gunlayer, W. J. Smith, received the D.S.M., not merely for good shooting, but because twice, when the gun misfired, he cleared everybody else away from it and opened the breach himself at great risk to his own life.

The number of British merchant vessels sunk by submarines in June 1917 was 116, as against 106 in May, 155 in April, and 103 in March. These were the only four months during the war in which the tale of British losses reached three figures. The gross tonnage which these 116 vessels represented was 391,004; while the toll of lives came down to 384, not much more than a third of the number killed or drowned as the result of submarine attacks in April.

It is particularly worthy of note also, that though there was a slight increase in the number of ships sunk in the month of June as compared with May, there was a much greater increase in the number of ships molested but not sunk; 116 merchant ships were lost, but 122 escaped. In other words more than half the submarine attacks in June were wholly or partly unsuccessful. The U-boat campaign against merchantmen was at its height, but

the merchant captains had profited by past experience ; they understood better the limitations of the submarine, and had become adepts at circumventing its attacks.

The month began auspiciously. On June 1st only one merchant ship was sunk, the *Cavina* (6,539 tons), off the south-west coast of Ireland, and this without loss of life ; while five other ships which were attacked by submarines escaped undamaged. In the case of the *Kingstonian* (6,564 tons) and the *Antinous* (3,682 tons), torpedoes were discharged and missed their mark ; the *Turnbridge* (2,874 tons) was attacked by gunfire on the surface and escaped by speed ; four times a submarine came to the surface to attack the *Cymric Vale* (3,580 tons), and each time was forced to take hurried refuge under water on the ship threatening to ram her ; while the *Cotovia* (4,020 tons) kept up for three hours a running fight upon the surface, controlling her fire carefully, and finally scoring a direct hit, after which the enemy gave up the chase.

The 2nd of June, however, proved the most disastrous day of the whole month. Only two ships were torpedoed, but in both cases there was heavy loss of life. The *Hollington* (4,221 tons) was sunk in the North Atlantic, and thirty persons perished, including the master. The case of the *Cameronian* (5,861 tons) was even worse. While carrying troops in the Mediterranean, she was struck by a torpedo at 3.30 a.m., fifty miles from Alexandria, and sank within five minutes. The troop-deck was flooded instantly, and many soldiers woke from sleep only to find themselves drowning. Altogether seventy soldiers lost their lives, besides the master of the ship and ten members of the crew.

On the following day the *Merioneth* (3,004 tons) was sunk by gunfire in the Arctic. A Norwegian fishing smack took her boats in tow, and brought them safely into Tromsø. The same day the *Greenbank* (3,881 tons) was attacked in the Mediterranean, and was hit seven times by the guns of the submarine, which completely outranged the ship's 12-pounder. The master (Mr. Edward Witten) then abandoned the vessel, but on the arrival of a French patrol boat and the prompt disappearance of the submarine, he and the crew returned on board, and tried to get the *Greenbank* into Oran. Very shortly, however, the sub-

marine reappeared and torpedoed them, and the ship was finally abandoned. For putting up a good fight under adverse circumstances the D.S.C. was awarded to the master. The *Islandmore* (3,046 tons), armed with a 6-pounder only, was attacked at long range off the coast of Algiers. The ship was hit repeatedly, the leading gunner and the second engineer were killed, and the chief officer, chief engineer, and several others of the crew were wounded. When the unequal fight had been maintained for an hour and a half, and the ship was badly on fire, the master surrendered, and was taken prisoner. The ship was then sunk by gunfire. For their gallant defence, the master (Mr. J. M. Eaton), the chief officer, and the chief engineer all received the D.S.C.

On June 4th the White Star liner *Southland* (11,899 tons) was torpedoed off the Irish coast. The submarine was not seen till after the explosion, which killed three firemen, flooded the engine-room, damaged some of the boats, and smashed the wireless apparatus. The master (Mr. T. Musgrave) ordered the remaining boats to be lowered and manned, and the gunners to fire whenever the submarine appeared, and himself went to the bridge to destroy his secret papers. A second torpedo then struck the ship, and she began to sink rapidly by the stern. The master and twenty-six men got away in the last boat just in time to clear the ship, but shortly afterwards the submarine appeared and rammed them, damaging the boat and almost capsizing it. By disguising himself, the master avoided being taken prisoner, and after spending the whole day in the boats the survivors were all picked up by the *Alavedo*.

On the same day and not far from the same spot the *City of Baroda* (5,541 tons) suffered the same fate. Nothing was sighted of the submarine till after the explosion, but the men aft saw the torpedo a second before it struck. The vessel sank in seven minutes. Six lives were lost—the third officer, the carpenter, one passenger, and three lascars. The water was up to the rail when Mr. Seaborne, the master, left the ship. Among the very last to get into the master's boat were two cadets, both very young, one of whom was on his first voyage, and had only been three days at sea. Captain Seaborne says that, at the last moment, before getting into the boat, these

lads were asking, "Any further orders, sir?" When the ship had gone down, the submarine came to the surface, and interrogated the crew. Her commander asked for the master and chief engineer, and was told they were last seen on the bridge. The submarine was then steered right into the second officer's boat, and it was only owing to quick action with the oars that the boat was not sunk. As it was she began to leak badly from the blow. Luckily a patrol boat was sighted coming up, and the submarine departed. The crew were landed at Londonderry the next morning.

Two merchant vessels which encountered submarines on June 4th, and escaped from them unscathed, were the *Manchester Port* (4,093 tons) and the *Miniota* (4,928 tons). Both these encounters took place in the Atlantic. The *Manchester Port* was attacked by gunfire at a range of 6,000 to 8,000 yards, and fired fourteen rounds in reply. The master, Mr. J. H. Groth, believed that the fourteenth hit the submarine; at all events she retired at that point from the fray. The *Miniota* sighted a submarine and engaged her first; but the master (Mr. W. P. Harris) found that his shots were falling short, and wisely withheld the rest of his fire till the submarine came nearer. The ship's last two shots were so near the submarine that she submerged, declining further action. A few hours later the *Miniota* went to the assistance of an American ship, the *Norlina*, which had been attacked. The following is taken from the official report.

"On approaching the *Norlina*, the periscope of a submarine was so placed that he could not come to the surface without exposing himself to the point-blank fire of the *Miniota*. The presence of the *Miniota* appears to have encouraged the *Norlina*, since she subsequently fought a gun duel with the submarine, and though apparently hit several times, drove off the submarine, and the next day sent out a wireless message to the effect that she had sunk the submarine. The master of the *Miniota* highly praised his ship's company, especially the shooting of the gun's crew." The gunlayer received special mention, and the master the D.S.C.

About this time the enemy was repeatedly reminded that officers of the British Merchant Service had acquired a high order of skill in evading submarines, and several

notable escapes may be quoted. In three cases the D.S.C. was awarded to the master. These were the *Akabo* (master, Mr. Daniel Evans), the *Loch Lomond* (master, Mr. R. R. Barker), and the *Thessaly* (master, Mr. James Lee).

The *Akabo* (3,814 tons) was off the south-west coast of Ireland on June 8th, when she was attacked and three torpedoes in succession were discharged at her, the first at 9 p.m., the second just before midnight, and the third at 2.30 next morning. By the prompt use of the helm and an extremely good look-out, all three torpedoes were avoided, and it is believed that the submarine was hit by one of the five shots from the ship's gun. The vessel was carrying seventy-five passengers, besides a crew of ninety-seven, and had any of the torpedoes found their mark there would almost certainly have been considerable loss of life.

Two days later the *Loch Lomond* (2,619 tons) was making for the Straits of Gibraltar, and in addition to her own complement had on board twenty of the crew of the American steamship *Petrolite*, which had been sunk that morning. She was attacked by gunfire, and replied with thirty rounds to about twice as many fired by the submarine. She was hit several times, but with her last shot hit the enemy craft, which at that point withdrew from the encounter. This submarine was the UC52, which very shortly afterwards claimed and received Spanish hospitality in the port of Cadiz.

The *Thessaly* (3,128 tons) was attacked by two submarines about the same time. The first was not visible, but was estimated to be about three and a half miles distant, and her shots were falling short. A second one began firing a few minutes later from a closer range, and the gunfire from the ship was concentrated on this enemy. The ship was manœuvred to bring both submarines astern, and a zigzagging course was steered. At 11.25 p.m. a shot appeared to strike one of the submarines, which ceased fire immediately. Smoke boxes were used with good effect, and ten minutes later all firing ceased, and the ship resumed her course. The ship's cook was killed by a shell.

Some other vessels which were attacked by submarines during this same week, and successfully survived the

encounter, were the *Fernleaf* (5,838 tons), the *Dominic* (2,966 tons), the *Minnie de Larrinaga* (5,046 tons), the *Pentwyn* (3,587 tons), and the *Holywell* (4,867 tons).

On June 10th the master of the *Fernleaf* (Mr. Stephen Edwards) sighted a submarine on the port bow crossing the ship's course, and made an unsuccessful attempt to ram her. Twenty minutes later the submarine appeared 4,000 yards astern, and the ship opened fire with her 4.7 gun, and caused it to disappear. A fortnight later the *Fernleaf* was again attacked, this time by gunfire, but though 100 rounds were fired at her, she was only hit once, and there were no casualties.

At 6.40 p.m. on the 11th, the *Dominic* sighted a periscope on her starboard beam. She got the submarine astern, and commenced firing with her 12-pounder. The submarine then came to the surface, and attacked with gunfire. The shots fell very close, and the master of the *Dominic* (Mr. Frank Scott) used the smoke screen with good effect, so that about 8 p.m. the submarine was no longer visible. Distress signals were let off, to make believe that the ship's gun was still being fired. At 9.30 p.m. the submarine renewed the attack, and as shrapnel was falling on the deck, the smoke screen was again used. After 10.30 p.m. the submarine was seen no more. This was an exceptionally prolonged encounter, and Captain Scott made full use of all the defensive measures and ruses that were open to him.

The *Minnie de Larrinaga* was on a voyage from Lough Swilly to the United States, and on June 11th was attacked by a submarine, which fired sixty-eight rounds at her, in the course of a fight lasting two hours and twenty minutes. Her master (Mr. H. F. Nagle) kept the submarine astern, and proceeded at full speed, using a smoke screen. He only fired five rounds in reply, as the submarine was for most of the time beyond the range of his 12-pounder, and he wisely reserved his ammunition. The enemy gave up the chase and submerged, without having scored a hit.

The same evening the *Pentwyn*, bound from Glasgow to Montreal, was attacked by torpedo and by gunfire, and succeeded in escaping both. She was zigzagging, and steaming at 10 knots, when the torpedo passed astern, missing her by twenty yards. The submarine then fired twenty-five rounds at her in rapid succession, from a range

of about five miles, but all the shots fell either wide or short; the *Pentwyn's* master (Mr. H. A. Motyer) fired three rounds in reply, and the submarine turned off to attack the *Thessaly*.

Of all the experiences of this particular day perhaps that of the *Holywell* was the most noteworthy. Between 7 a.m. and 3 p.m. she was engaged in conflict with three separate submarines, and came through undamaged by any of them. The master (Mr. George Sharpe) sighted the first submarine at 7.15 a.m., and at once opened fire. After two rounds the submarine submerged, and had to slacken speed, so that the *Holywell* rapidly increased distance. The master reported: "The last I saw of him, he was steering in a north-westerly direction. Two masts and one periscope were visible. Am unable to say whether this submarine fired a torpedo, but two of the native crew said they saw one pass astern. At the time of attack I zigzagged about sixteen points, putting my helm hard over each way; I think this baffled the submarine." At 2.15 the same day a second submarine appeared on the port side of the ship, abreast of the engine room, and only about a ship's length away. Captain Sharpe at once ordered the helm hard-a-port, and directed the gunner to train the gun on the starboard quarter. The torpedo passed about 10 feet astern. The second shot from the ship exploded right over the submarine, and it submerged. This submarine had only one mast visible. While the encounter was still in progress, a third submarine was sighted about five miles away; this one fired twelve rounds at the *Holywell*, all of which fell short. During the next few hours, the vessel passed through a great quantity of wreckage, but was eventually met by a destroyer, and escorted into Falmouth. The *Holywell* was on voyage from Calcutta to Dundee; and the following extract from the master's report is in pleasant contrast to some experiences which have been mentioned earlier: "During the attacks the native crew behaved splendidly, firing the steamer, and kept good speed, also passing the ammunition to the gun's crew, and keeping a good look-out."

In two more instances about this time submarine commanders behaved with quite unnecessary brutality to the survivors of ships which they had sunk. The *Anglian* (5,532 tons) was sunk by torpedo on the 10th. Three

boats got clear without accident, but the fourth, in which was the master (Mr. Charles J. Lawrence), was damaged. The submarine emerged about two hundred yards away, and pressed her stern against the boat, damaging it still further. All those in the boat were made to hold their hands up, at the point of a revolver, while they were interrogated about the ship.

The other ease was that of the *Alfred*, a small sailing vessel (130 tons), which was captured, and sunk by bombs, the submarine commander photographed the crew, and told them they would be shot if he caught them trading again. His men picked their pockets, taking all their money, and looted the vessel before sinking it.

On the 13th the *Darius* (3,426 tons) and the *Kelvinbank* (4,072 tons) were both torpedoed, the former with a loss of fifteen lives, and the latter of sixteen, including the master.

Among the many vessels sunk during the remainder of the month were the *Addah* (4,397 tons), with a loss of nine lives on the 15th, the *Stanhope* (2,854 tons), with a loss of twenty-two lives on the 17th, the *Kangaroo*, a small sailing vessel (76 tons), on the 18th, with a loss of four, including the master, the *Clan Davidson* (6,486 tons), with a loss of twelve, and the *Don Arturo* (3,680 tons), with a loss of thirty-four, including the master, both on the 24th, the *Guildhall* (2,609 tons), on the 25th, with a loss of twelve lives, and the *Serapis* (1,932 tons), on the 26th, with a loss of nineteen lives.

The *Serapis* furnishes another illustration of enemy methods. She sank one minute after the torpedo struck her, so that there was no time to launch the boats, and all on board were thrown into the water. The submarine then came to the surface, and picked up the master and chief officer as prisoners, but made no attempt to help the drowning crew. The second officer managed to collect some wreckage, and with four other survivors made a raft, on which they drifted the whole night. In the morning this capsized, and three of the five men were drowned. Later the fourth man became delirious, and died. The second officer was rescued in the afternoon by a British submarine.

Many actions were fought during the second half of June in which the merchant ship came off victorious.

In one case at least, that of the *Valeria* (5,865 tons) on the 20th, the submarine was sunk; this was the U99, which had been operating in the Atlantic; in other cases the enemy was driven off, and the attacked vessels escaped without serious damage.

On the 19th the *Morinier* (3,804 tons) was attacked by gunfire from a submarine which fired from 90 to 100 rounds at a range of 4,000 yards, and hit the ship eight times. The *Morinier* replied with forty-nine rounds. She mounted a 4.7 gun, but her deck did not appear to be strong enough to support the gunfire properly. In spite of this, she fought the enemy for two hours, and succeeded in driving him away. The master (Mr. Henry Saunders) was awarded the D.S.C.

The master of the Cunarder *Valeria* (Mr. W. W. Stewart) felt a sudden vibration, as if something had been struck, about 3 a.m., as he was nearing the Irish coast on a voyage from New York. He rushed across the bridge and saw a submarine emerging, its periscope broken by collision with the ship. The gunners saw it at the same instant, and before it was a hundred yards away had depressed the gun, and with the first shot pierced the enemy's hull. Within ten seconds the submarine was hit again, and sank. The *Valeria* had on board 5,000 tons of wheat besides other foodstuffs, a large quantity of munitions and a number of horses.

The master of the *Ardens* (Mr. H. T. Shilling) had already been a prisoner in Germany for sixteen months. In the late evening of June 30th, his ship was missed by two torpedoes, when he was about twelve miles from Flamborough Head. The *Ardens* was only armed with a 6-pounder, and to give the gunlayer a better chance the master stopped her. The second and third shots both hit their mark, and were followed by explosions, after which the submarine was seen no more.

Another successful escape was that of the *Alban* (5,223 tons), which, when off the Irish coast on the 17th, sighted a torpedo coming towards her, and avoided it by quick action of the helm. She then fired four rounds at the spot where the submarine was thought to be, and the second officer reported oil upon the surface. The master (Mr. A. W. Stoker) highly praised his gunner.

The next day the *Palma* (7,632 tons), a P. and O. liner



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TORPEDOED MERCHANTMAN ON FIRE.

with a valuable cargo from New York, was attacked in the Atlantic by two submarines, one on each beam. In spite of the ship's huge hull and moderate speed, which rendered her a comparatively easy mark, the enemy vessels were completely outmanœuvred and outfought. The first torpedo was seen approaching off the starboard beam only about fifty yards away. Immediately the helm was put hard-a-starboard, and the port engine stopped, and the torpedo passed within a few feet of the rudder. The second submarine then went by, close under the ship's stern, discharging a torpedo as she passed, and this also was narrowly avoided, as was one more fired by the first submarine. As soon as the master of the *Palma* (Mr. E. B. Bartlett) had got both submarines astern, and a sufficient distance off, he opened fire on them, and after the sixth round they were seen no more.

The *Devona* (3,779 tons) in the Bay of Biscay on the 20th, and the *Celia* (5,004 tons) in the Atlantic on the 24th, both drove off attacking submarines by the excellent shooting of their guns' crews; and the little *Fairmuir* (593 tons), which was not even armed, escaped an attack by gunfire in the Arctic on the 30th, by good seamanship and speed. The *Fairmuir's* master (Mr. N. McNeill) and the *Celia's* master (Mr. D. M. Taggart) both received the D.S.C., while Mr. D. R. Murray, master of the *Devona*, was awarded special mention.

One more successful escape occurred in the month of June for which the credit was entirely due to the skill with which the ship was handled. The *Nitonian* (6,381 tons) had crossed the Atlantic with a valuable cargo of foodstuffs, cotton, and munitions, and was approaching the coast of Ireland on her way to Liverpool. At 11.19 a.m. on the 20th her master (Mr. D. Lawton) sighted a submarine three or four miles away on his starboard bow. Immediately, he altered the ship's course to bring the submarine astern, gave the emergency ring to the engine-room, and sent out distress calls by wireless, giving the exact position. The first shot fired by the enemy fell short, but from then on shots were falling very near the ship on either side, and Captain Lawton was continuously ordering the helm over one way or the other to disconcert the attacker's aim. It would appear to have been solely due to his good seamanship and judgment that throughout

the long encounter only one shot hit the vessel. That happened at 11.50, the shell passing through the deck, and setting fire to some bales of cotton sweepings in a hold. It was impossible at the time to put out the fire, as all hands were fully occupied, and the same shell had also broken the steam pipe. When the vessel had come round so that she was heading in a south-west direction, the master used his smoke screen, and protected himself from the submarine's observation for about half an hour.

At the end of that time the submarine was found to be within easy range of the ship's gun, and six shells were immediately fired and fell very close, causing the enemy to make off hastily. After about 2 p.m. she was not seen again, and the *Nitonian* resumed her proper course. Altogether eighty-one shells had been fired by the ship and about 120 by the submarine. As the ship only had the usual allowance of 90 shells, she was beginning to run short. At 4.38 p.m. the *Nitonian* was met by a destroyer, which escorted her into Lough Swilly, where her fire was extinguished. As an illustration of the shortage of patrol vessels at this time, it is noteworthy that all through the encounter wireless messages were sent out, giving the course and position of the ship, and that these were duly received on shore and relayed to the patrols, but no help came till two and a half hours after the attack had been successfully defeated, although the vessel was quite near the Irish coast.

CHAPTER VII

THE 10TH CRUISER SQUADRON (II)

*January 1917–December 1917*¹

As the year 1916 drew to a close, Germany began to feel seriously the pressure of the Allied blockade, and her food supplies were running short in a way that inflicted real hardship on her people. The 10th Cruiser Squadron was fulfilling its appointed task. Although it was a weak force, the number of neutral or enemy ships that slipped through the patrols without being stopped and identified was inconsiderable.²

On January 1st, 1917, the *Changuinola* and *Ebro* rejoined the "A" Patrol from the "E" Patrol, north of Iceland, and the *Virginian*, flying the broad pendant of Commodore J. S. Luard, temporarily in command of the squadron during the absence on leave of Admiral Tupper, while the *Alsatian* was refitting, went to "E," working between 65° and 67° N., 8° and 13° W. The French cruiser *Champagne* was also sent to join the squadron, and left Brest about January 5th. A chase took place on January 14th which revealed the handicap under which the 10th Cruiser Squadron had sometimes to operate. The *Motagua* succeeded in overhauling the British steamship *Oswego* in 59° 57' N., 10° 33' W., after following her for three hours. She was on her way from Middlesbrough to New York, in ballast, and

¹ See Plan facing p. 210.

² Vessels intercepted by northern patrols from July 1st to December 31st, 1916 :

Intercepted and passed	.	.	2,265
Sent in under armed guard	.	.	813
Vessels calling voluntarily	.	.	718
			3,796

Out of this number the 10th Cruiser Squadron intercepted 2,108 vessels. The total number was calculated as being 95.9 per cent. of the ships passing through the blockade zone, but this included the ships examined in the Downs.

steaming without lights. The master reported that he had received orders at Middlesbrough that, after passing longitude 10° W., he was neither to show lights nor stop for anybody. This information was reported to the Admiralty, and it was pointed out that the ship ran considerable risk of being fired on by the patrol.

At this period enemy submarines were active in northern waters, and added to the difficulty of maintaining the blockade. At 9.30 a.m. on January 7th the *Columbella* engaged an enemy submarine in $59^{\circ} 59' \text{ N.}$, $7^{\circ} 57' \text{ W.}$ The submarine was on the surface, but submerged directly fire was opened, and did not discharge a torpedo. Orders were at once given for the patrols to work at increased speed. There was an idea at this time that submarines were showing a bright white light at intervals, possibly as a signal to their supply ships, but though any vicinity where these lights were shown was searched, nothing further came of the suggested explanation.

Submarines were again reported off the West Coast and St. Kilda on January 17th and 18th, and a Swedish ship, the *Japan*, reported that she had been boarded by a submarine in $50^{\circ} 34' \text{ N.}$, $12^{\circ} 54' \text{ W.}$ on January 17th. On the 21st the armed trawler *Walpole* was attacked, north-west of St. Kilda, by an enemy submarine, which fired one torpedo, and submerged when the *Walpole* opened fire on her. The four armed trawlers in the vicinity were ordered to concentrate and search for her, and she was again sighted by the *Saxon* at 2.30 p.m. at a distance of three miles. The *Saxon* gave chase, but the submarine dived, and was not seen again. A Danish schooner, the *Marden*, reported that she had been stopped by an enemy submarine at 3 p.m. on January 20th in 55° N. , $10^{\circ} 45' \text{ W.}$ The submarine then went north. Another submarine was reported off Muckle Flugga on the 22nd.

Nor were submarines the only menace to the vessels of the 10th Cruiser Squadron. Reports of mining at the entrance to Swarbacks Minn were received on January 21st, a mine having exploded in the sweep, and two of the squadron were kept in harbour, while the *Patia*, which was due to coal there, went to Loch Ewe instead. Most of the submarines reported were probably laying mines.

On January 26th a report was received that the *Laurentic* was torpedoed off Lough Swilly, and the *Columbella* and

Victorian, which were coming from the west, were warned accordingly.¹ It was decided at the end of January that the ships of the squadron should coal more frequently at their southern bases, instead of at Swarbacks Minn.

A submarine was reported in $60^{\circ} 32' \text{ N.}$, $1^{\circ} 55' \text{ W.}$ on the 28th, and the *Motagua*, which was due to arrive at Swarbacks Minn on the 29th, was warned, but at 7.30 that morning, when eight miles from Esha Ness (north of the Shetlands), she was fired at and missed by a torpedo, but did not sight the submarine.

While the Admiral was dealing with the mine and submarine peril, a vigilant look-out had to be kept for surface raiders. On January 24th the patrols were again spread to intercept a raider, which was thought to have passed the Vyl Lightship on the afternoon of January 23rd, steering north. The 2nd Cruiser Squadron was also sent out to intercept the raider, but without success, and light cruiser squadrons, with armed boarding vessels and destroyers, were detailed to patrol to north of Muckle Flugga and on the Sydero-Noup Head line. Wireless silence was maintained, and the next day the *Hildebrand* and *Avenger* were sent to Denmark Strait in case the raider had got through to the north of Iceland. Normal patrol was not resumed till the 28th.

The *Avenger* and *Hildebrand* were recalled from Denmark Strait on the 29th and ordered to join "A" Patrol. Admiral Tupper strongly advocated that two ships should guard the west and north-west coasts of Iceland, for the express purpose of preventing the passage of raiders, but for the time being too few ships were available.

He had already represented to the Admiralty that he had still only six armed trawlers at his command, though ten had been promised, and he considered that ten was the smallest number that could keep guard over waters "in soundings" where the larger ships feared to venture on account of submarines. It was always accepted that his cruisers should remain outside the 100-fathom line. Admiral Tupper mentioned particularly the trade routes off the coast of Iceland, round the Faeroe Islands, and between St. Kilda and the Rockall Bank. The two trawlers patrolling off the Rockall Bank had already intercepted quite a large number of ships. This was the "broad unwatched

¹ The *Laurentic* was sunk by a mine on January 25th.

passage " west of the Hebrides, now becoming known to the captains of neutral vessels who wanted to slip through the patrols without being stopped.

The changed objective of the U-boats was already being felt, and more frequent attacks on the squadron were expected, but the Admiral had no destroyers or other fast vessels to send out in haste to pick up survivors or otherwise assist a cruiser that had been torpedoed. As a rule the patrol lines lay so far from Scapa that even if destroyers were despatched immediately they could not arrive in time either to catch the submarine or give effectual help to the ship attacked.

The average number of ships sunk each month had risen enormously since the Germans had resumed their "cruiser warfare" on commerce in October 1916, but during February the number of British vessels alone, sunk by submarine, had more than doubled the average loss for any one of the five preceding months. It was impossible not to foresee that losses would increase until new measures, already outlined by the Anti-Submarine Division of the Admiralty War Staff, established in December 1916, could become effective, and that at the same time the Germans would continue to produce submarines in ever-increasing numbers. They had already eighty submarines fitted for mine-laying, and the menace from mines was becoming daily more acute.

The 10th Cruiser Squadron was affected perhaps more than any other unit of the fleet by the German declaration of unlimited submarine warfare in February 1917. It meant that the days of the squadron as such were numbered, because all the circumstances of their employment were changed. The blockade of Germany, already largely a matter of rationing the neutrals, generally by agreement with the neutrals themselves, could no longer be maintained and supervised by the process of intercepting ships at sea, and either passing them through the patrols, or sending them into British ports under an armed guard, for further examination.

Like all other armed merchant ships, the vessels of the squadron were singularly susceptible to under-water attack. Their speed was inadequate, especially as, when they stopped to carry out their boarding work, any one of them, with the vessel boarded, was an easy prey to the

prowling submarine, who could fire her torpedoes at both ships and vanish like a fish under water before action could be taken.

On February 3rd Admiral Tupper, in the *Alsatian*, was directed to go to Scapa to see the Commander-in-Chief of the Grand Fleet. This was a most anxious moment in the history of the blockade. The 10th Cruiser Squadron was still very much below its estimated strength. Only nine cruisers and three armed trawlers were actually on patrol. No fewer than seven ships were under repair at Liverpool. Three others were on special service. To add to the current difficulties, Kirkwall was closed owing to mines on February 9th, and all ships with armed guards were sent to Stornoway and Lerwick.

The *Moldavia*, on February 9th, intercepted an Italian ship, the *Famiglia*, in $58^{\circ} 38' \text{ N.}$, $10^{\circ} 8' \text{ W.}$ with a German armed guard (officer and 5 ratings) on board. There were also three Englishmen and nine Italians in the ship. To evade capture, the Germans exploded bombs in the engine-room and fore hold, and the ship sank shortly afterwards. The armed guard and the crew were taken on board the *Moldavia*, whose captain took possession of the German officer's diary and other papers.

On February 10th at 9.40 a.m. the armed trawler *Walpole* reported that she was chasing a submarine steering north on the surface and throwing off heavy black smoke. She was lost sight of at 10.40 a.m. In the meantime, three more trawlers were ordered to join the chase, and each of them engaged submarines at different times. The third trawler, *Robert Smith*, engaged two submarines at extreme range. It was suggested that a 12-pounder gun in the *Walpole* might have settled the fate of the submarine.

Soon after the opening of the "unrestricted" campaign, an armed guard, sent on board the Norwegian steamship *Stralsund* to take her in to Troon for examination, had a narrow escape. They boarded the ship from the *Alsatian* in $61^{\circ} 24' \text{ N.}$, $12^{\circ} 20' \text{ W.}$ on February 14th, and proceeded south of St. Kilda, which was sighted on the 15th at 2 p.m. At 4.20 p.m. the *Stralsund* was stopped by a submarine, which fired at her several times and then submerged. Sub-Lieutenant C. E. Elliott, R.N.R., who was in charge of the armed guard, urged the master to try to escape, but he refused for fear of being torpedoed. Meanwhile, Sub-

Lieutenant Elliott and the guard disguised themselves—Sub-Lieutenant Elliott afterwards recorded that “he put on some old clothes he found in a cabin”—and then warned the master not to mention the fact that he had been intercepted by a British man-of-war, or to give away the presence of the armed guard on board.

The submarine then reappeared, and the master, with three of his men, left the ship in a boat and went on board the submarine with his papers. The submarine then hoisted a signal to abandon ship, and the rest of the crew with the guard got into the two remaining boats. Sub-Lieutenant Elliott managed to drop a bundle of papers and firearms overboard without being observed. Meanwhile the master had reached the submarine, and a German officer with a seaman left in the *Stralsund's* boat, and went on board her with four bombs. Twenty minutes later there were two explosions, and the vessel sank by the stern. It was then getting dark. The master and his three men left the submarine and joined the others. Sub-Lieutenant Elliott and three of the guard were in a dinghy, and were taken off by the master of the *Stralsund* in his lifeboat. The master reported that the presence of the guard had not been discovered. All his papers had been kept, but he was given a sort of receipt for his ship. Apparently the crew were not counted by the submarine's officer, a fortunate circumstance. The commander of the submarine had questioned the master of the *Stralsund* very closely as to the latest news from America and opinion there with regard to Germany. He was asked if he knew of Germany's last Declaration as to the prohibited area round Great Britain, and was told that his ship and everything else in the area would be sunk. The submarine commander said that he had been out for forty days and would be out for ten days longer. He admitted that he had intended to hit the *Stralsund* when he fired at her.

The two boats then set sail for St. Kilda, and to keep themselves warm all hands took spells at the oars. On the 16th they were under the lee of St. Kilda, after having made an attempt to pass between the islands, in which the boats nearly capsized. As they could find no opportunity for landing, they decided to make for the Flannan Islands and look out for a patrol boat, and in about an

hour saw the lights of a vessel. To attract her attention they poured some paraffin on a handkerchief, set light to it, and waved it on the end of a boat-hook. The vessel was an Auxiliary Patrol trawler, the *Rushcoe*, and she promptly switched off lights and turned away, but the party in the boats all joined in hailing her, and she eventually picked them up at 3.30 p.m. They reached Stornoway that night and the guard rejoined the *Alsatian* on February 21st.

A new difficulty had arisen for the blockading squadron, as the alarm among neutral ships with regard to enemy submarines became more marked. This was illustrated when the *Orvieto* on February 18th boarded a Norwegian steamer, the *Tricolor*, in 62° 40' N., 11° 12' W., bound from Bergen to Newport News in ballast. The vessel had not called at a British port, and had no consular certificate. While waiting for a reply to her first signal, the *Orvieto* examined another light, which proved to be that of a British trawler. The *Tricolor* meanwhile extinguished her lights and attempted to get away. She was again intercepted, and an armed guard put on board to take her to Kirkwall. The crew then refused to work the ship, and the master stated that they had been engaged on the understanding that they should not enter the war zone. The matter was referred to the Admiralty, who allowed the vessel to proceed on the master giving an undertaking to call at Halifax. This he agreed to do.

This question had become pressing, as the crews of neutral vessels were often not willing to work their ships into British ports. The "war zone" of the Germans, which British seamen regarded almost with contempt, had alarmed them, and among other measures suggested for preventing neutral ships from being sunk while on passage to British ports a system of escort was suggested by Admiral Tupper.

The six trawlers working off St. Kilda, and attached to the 10th Cruiser Squadron, had already been used to escort intercepted vessels, until they could be turned over to the Stornoway Patrol, and the Admiralty had decided to give Admiral Tupper twelve more trawlers which might be used for the purpose. It was also decided that ships should be sent to Kirkwall and not to Lerwick, and that they should be escorted by vessels of the Orkneys

Patrol from a position twenty miles west of Noup Head. The sailing of men of war (except destroyers) via the North Channel was suspended, and the departure of the *Virginian* to rejoin the squadron after refitting at Liverpool was delayed in consequence.

On February 27th sixteen vessels out of an available twenty-one were on patrol. Submarines were reported again, on February 28th and March 1st, north of St. Kilda. The armed trawler *Robert Smith* chased one of them, but without success. A Norwegian barque, the *Durban*, was escorted into Stornoway on March 3rd by the *Walpole*. The barque had been fired on and holed by a German submarine, but had managed to escape.

The *Kildonan Castle*, which had been on special service since January 10th, rejoined the squadron on March 5th. On the following day—when, owing to submarine alarms, the patrols were all shifted westward again—Admiral Tupper reported on his year's work with the squadron. During that time 3,478 ships had been intercepted, and 877 sent in with armed guards. Although several ships had been attacked by submarines, no ship had been hit by a torpedo, and in spite of the dangerous work carried out by the squadron—cruising without lights, intercepting ships night and day in all weathers, boarding them, placing armed guards on board, and conducting them in safety to their various destinations—there had been no loss of life, and only one cruiser had been injured, though two officers and one man had been taken as prisoners to Germany by enemy submarines, while performing armed guard duties.

Although the declaration of a war zone by Germany might have had, and in some ways had, a deterrent effect on the movements of merchant traffic, the five weeks between January 28th and March 4th showed a slight increase over the figures for the corresponding period in 1916—180 ships intercepted and 55 sent in against 171 and 47.

The position in March 1917 was perhaps the gravest that Great Britain had experienced since 1914. The outstanding question, which eclipsed every other at the time, was the extent to which shipping losses would undermine the capacity of the Allies to continue the war. In a general review of the naval situation compiled at the Admiralty for the War Cabinet, in March, it was stated that it was "impossible to over-estimate the gravity of

the situation." The shipping available was barely sufficient to carry ordinary requirements—food, munitions, stores, raw material—for the Allied countries.

This short consideration of the general position is necessary to make clear what was the preoccupation of Admirals and Admiralty when the cry for reinforcement sounded on every side, and with great urgency from the blockade squadron. It was no longer only to guard waters "in soundings" or to escort ships sent in for examination, that Admiral Tupper asked for more armed trawlers and cried aloud for destroyers, but because without some such protection his own ships were in danger of becoming impotent.

The declaration of war by the United States in April entirely changed the character of the blockade, a fact sometimes overlooked in arguments based on the success of the more apparently vigorous measures of 1917 and 1918. With the adherence to the Allied cause of the most powerful neutral, against whose trade with Germany it had been impossible to take adequate precautions, the blockade could be easily tightened, and America could and did apply increased pressure on the remaining neutrals to shorten enemy supplies.

As far as the 10th Cruiser Squadron was concerned, the establishment of oversea examination ports, rendered necessary because the majority of merchant captains refused to enter the submarine danger zone near Great Britain, reduced by a very large percentage the number of ships that had to be intercepted and sent in to home ports, even before the registration system for ships and cargoes was so far perfected that the blockade was practically enforced—and very efficiently enforced—ashore.

Meanwhile, the Admiral's urgent and reiterated requests for even two destroyers to work with the squadron had to be refused. The trawlers attached to his command were worked to pieces in trying to escort the ships sent in for examination, but they could not do it, and the smaller, slower merchant vessels were frequently sunk, though in many cases the escorting trawlers were in time to rescue the crews and armed guards.

It became gradually apparent that the only practicable form of protection against submarines for unarmed or only defensively armed ships was some system of convoy.

The position before convoys could be regularly established increased the already numerous difficulties of the blockade squadron. Reports from the Admiral gave a constant string of positions where the enemy's submarines had been sighted; this involved a continuous shifting of patrols. He drew attention to the impossibility of adequate escort; crews saved; and emphasised his great anxiety for the unwatched route west of the Hebrides, as the patrols had to be constantly moved farther westwards. The position is clearly explained in Lord Jellicoe's book, *The Crisis of the Naval War*. He says that "in the early stages of the convoy system difficulties were experienced from the fact that all the available destroyers and most of the sloops were used as escorts, with the result that the ships not under convoy were left with but little protection."

It was recognised at the Admiralty that the larger contingent of small vessels for which Admiral Tupper had so urgently pleaded was practically a necessity if the work of the squadron was to be carried out at all; and it was therefore proposed to take up the last remaining twelve Icelandic trawlers, though it would palpably reduce the fish supply of the country.¹ The trawlers that fished off Iceland were naturally large powerful boats, fitted for remaining at sea for long periods, and were therefore particularly suitable for work with the squadron. It was eventually decided that six of the remaining vessels should be taken up, and six of the same type which were already working for the Rear-Admiral East Coast should be allotted to Admiral Tupper. Smaller vessels were to be sent to do the work on the east coast.

On February 15th, the Admiral heard that he was to have these vessels; but the matter had become more insistent than ever, and on the 13th he had already written again urging that he might be given eighteen, and asking for twenty-four. The Commander-in-Chief wrote a covering letter (February 13th) to emphasise the importance of fitting out more trawlers for the 10th Cruiser Squadron. Admiral Tupper proposed a strength of twenty-four blockading cruisers and at least an equal number of trawlers. His idea was either to form a very strong anti-submarine

¹ The Hull owners represented that it would reduce the fish supply by 7,000 tons a year, and cost the port of Hull £300,000 for the same period.

patrol in the northern channels (between the Orkneys and the Shetlands, the Shetlands and the Faeroes, and westward of the Faeroes), or else to place the trawlers alternately with the cruisers on patrol, steering alternate courses. The Commander-in-Chief considered that each ship of the squadron ought to have a trawler attached to her when on patrol. "An attack in force on these ships by submarines," he wrote, "is to be expected in the near future, and I submit that some measure of protection should be provided for these vessels in view of their value, personnel, and the work carried out by them."

Clearly these suggestions were not made because the existing blockade was ineffectual, but because the ships had to face a new danger, or, if not actually new, a very much intensified danger. But the resources at the disposal of the Admiralty would not admit of any increase in the number of trawlers lately allotted to the squadron.

To understand the peril to which these ships were exposed, the method of their patrols must be explained. Two kinds were in use:

(1) The "Cross" Patrol—vessels steaming backwards and forwards in line ahead across the track of ships.

(2) The "In and Out" Patrol—vessels steaming backwards and forwards on parallel courses along the track of shipping.

The "Cross" Patrol covered the larger area and made it possible to place ships farther apart, as they could keep a look-out both ways equally, but the whole patrol was upset if vessels had to be boarded. It was the more concentrated form of patrol, and therefore more open to attack. The ships were generally limited to beats of about thirty to forty miles. With the "In and Out" method it was easier to alter quickly the position and locality of the patrol, and to concentrate on ships following any particular route. For instance, in concentrating on east-bound ships, the patrolling vessels steered east during the dark hours, and half-time east, half-time west during daylight; vice-versa for west-bound ships.¹ The "In and Out" Patrol was practically always used in the centre of the patrolled area—the "B" and "C" Patrols. The "A," "D," "E" Patrols, which usually consisted of two or three ships each, were arranged

¹ This description is taken from Admiral Tupper's lecture, 25.10.22, *R.U.S.I. Journal*, February 1923.

by the senior officer present, according to information. Sometimes they would cruise abreast, sometimes in line ahead, sometimes in quarter-line.

As an example of how the ships were disposed in patrolling the 800 miles of grim grey sea that stretches from the Orkneys to Iceland, the disposition of the squadron at noon on 1st April may be given :—

"C" Patrol :

Proceeding to a line 360° from *Artois, Changuinola, Kildonan Castle.*
59° N. 10° 30' W. crossing
0200, steering 80°, and 1000
steering 260°. Ships 30 miles
apart.

"B" Patrol :

Crossing line 320° from 62° N. *Hildebrand, Champagne, Otway.*
11° 10' W. at 0200, steering
60°, and 1000 steering 240°.
Ships 30 miles apart.

"A" Patrol :

Steering 320° and 140° from 62° *Patia.*
40° N. 15° W. in southern
position noon and midnight
daily.

Between "B" and "C" Patrols . Avenger.

"E" Patrol :

North-west of Iceland off Isa Fiord *Gloucestershire, Ebro.*

<i>St. Kilda Patrol :</i>	.	.	.	Armed trawlers, <i>Rushcoe</i> and <i>Tenby Castle.</i>
Rejoining patrol from Liverpool	.	.	.	<i>Almanzora, Armadale Castle.</i>
Proceeding to Clyde	.	.	.	<i>Patuca.</i>
Proceeding to Oban	.	.	.	Armed trawlers, <i>Arley</i> and <i>Robert Smith.</i>
At Swarbacks Minn	.	.	.	<i>Motagua.</i>
At Liverpool	.	.	.	<i>Alsatian, Victorian.</i>
At Clyde	.	.	.	<i>Orvieto, Andes, Virginian</i> (while Liverpool was closed to traffic), <i>Moldavia, Hilary, Columbella.</i>
At Oban	.	.	.	Armed trawler <i>Walpole.</i> Special service vessel <i>King Lear.</i>
At Loch Ewe	.	.	.	<i>Arlanza.</i>
At Fleetwood (refitting)	.	.	.	Armed trawler <i>Saxon.</i>
On special service	.	.	.	<i>Orcoma.</i>

By this it will be seen that ten ships were actually on patrol ; one was at Swarbacks Minn and one at Loch Ewe, coaling ; two were on their way to rejoin patrol after refitting ; five were at Liverpool and the Clyde to refit ;

four were on their way to refit; and one was on special service—total, twenty-four.

Two armed trawlers were on the St. Kilda Patrol, one was at Oban, two were on their way to Oban, and one was refitting at Flectwood—total, six. The extra trawlers promised had not yet arrived.

The danger of submarine attack on these blockading cruisers was met, as a rule, by warning the patrols every time and moving them to westward directly a submarine was reported anywhere near the route on which they were working. Nevertheless, submarines were very frequently sighted by ships on patrol, and their rescue work, in picking up boats with crews and passengers who had recently escaped from sunken ships, was incessant. It is also a fact that, particularly on the St. Kilda patrol, a signal of distress was invariably answered by the nearest cruiser going in search, but she was generally recalled if there was any chance of sending armed trawlers to continue the hunt.

The days had changed since every merchant ship had attempted to evade the patrols; now they shared the same danger, and the safest course for both watcher and watched was to keep up speed, zigzagging where possible, but always going ahead as fast as they could through dangerous waters. It was no longer a case of stopping trade from going to Germany; the Germans made no distinction. They were out to sink every ship they saw. Nevertheless, it was instinctively realised that submarines had an inherent distrust of ships in company. No fewer than four ships of the squadron were sunk by submarines between May and October 1917, the *Hilary*, *Avenger*, *Otway*, and *Champagne*, and in each case the ship was alone, either on her way to port to coal or rejoining her patrol. The *Virginian* was also torpedoed when with a convoy, on August 21st, but was brought into port and claimed to have sunk the submarine.¹

Possibly the original instance, when the cruisers *ABOUKIR*, *CRESSY*, and *HOGUE* were sunk almost simultaneously by a submarine in September 1914, had left so deep an impression on the naval mind that the change brought about by later experience was hardly realised. Then Captain Drummond of the *ABOUKIR* believed that he was in a minefield, and made no attempt to warn the sister-

¹ The *Motagua* was mined in March but not sunk.

ships of a possible submarine, but in later days mines were almost invariably supposed to be submarines, and precautions were taken accordingly. The captains of our own submarines understood the position better, and a considerable number of the naval protagonists of the convoy system clearly envisaged the fact that the mere sailing of ships in company was a protection against under-water attack. Admiral Tupper himself advocated a limited system of convoy, in the approaches to the Channel ports or in narrow waters leading to ports. In suggesting that every vessel of the 10th Cruiser Squadron should be accompanied when cruising by an armed trawler, the Commander-in-Chief advocated the same system, and if it could have been adopted, the four torpedoed cruisers might have been saved.

In the case of the *Avenger*, sunk on her way to Scapa to oil (in June), the Commander-in-Chief had detailed two destroyers to screen her into port; they were only thirty miles off when she was attacked, and as she did not sink for some hours, they were able to rescue all her personnel.

Safety under escort was, of course, not an absolute certainty. Two British steamers, the *Mendip Range* and the *Queen Adelaide*, were intercepted by the *Virginian* on June 17th, in $58^{\circ} 31' \text{ N.}$, $15^{\circ} 20' \text{ W.}$, and were sent on to Stornoway under escort of three armed trawlers. About noon on June 18th, while still under escort, the *Queen Adelaide* was torpedoed and sunk, in $58^{\circ} 44' \text{ N.}$, $8^{\circ} 35' \text{ W.}$ All her crew but three were saved by one of the trawlers, and the *Mendip Range* with the other two escorting vessels arrived safely at Stornoway. This was, however, the only occasion during the war when a ship was sunk while under escort of trawlers attached to the 10th Cruiser Squadron.

To return to the narrative of the proceedings of the squadron, at the beginning of March all sailings of men-of-war, with the exception of destroyers, via the North Channel, had been suspended until further orders, on account of submarines, and in consequence the *Virginian* was kept at Liverpool, where she had been under repair. The *Orcoma* was still absent, but the *Almanzora* and *Arlanza* had rejoined the squadron. The *Gloucestershire* and *Kildonan Castle* were on their way back from special service. On March 6th all the patrols ("A," "B," and "C") were moved to W. of 17° W. at 9.30 p.m., in response to an order from the Commander-in-Chief. Earlier in the

day a supposed submarine had been sighted by the *Hilary* in $59^{\circ} 22' N.$, $9^{\circ} 15' W.$, and by the *Kildonan Castle* still farther north, so that "C" Patrol had already been ordered, at 6.10 p.m., 60 miles to the westward of $9^{\circ} 15' W.$

On March 8th at 11.30 p.m., after the message had been delayed by wireless difficulties, orders were again received from the Commander-in-Chief, to move the squadron (eleven ships) to "Patrol Line IV," W. of $20^{\circ} W.$ ¹ As it was assumed that this movement to westward was again caused by reports of submarines, wireless communication was suspended in the squadron, except for urgent messages. On March 9th the patrols got into their new stations during the forenoon, but as communication with the Commander-in-Chief was still difficult, the *Orvieto* was used as wireless link, patrolling at high speed on the meridian of $11^{\circ} W.$ Ordinary wireless communications were resumed the next day.

Conclusions have yet to be drawn from the history of wireless messages between the Admiralty and ships at sea, and between the ships themselves. Under normal conditions messages were conveyed successfully and usefully, but the apparatus sometimes broke down when most urgently needed.

On Sunday, March 11th, at 2 p.m., the *Armada Castle*, on her way to rejoin patrol, from Swarbacks Minn, in $62^{\circ} 39' N.$, $14^{\circ} 14' W.$, boarded the Swedish s.s. *Helsingborg*, from New York to Landscrona with barley. An armed guard was put on board to take the ship to Kirkwall, but the firemen refused to work, and the *Armada Castle* stood by, awaiting instructions by wireless. Commander England was ordered to take such firemen as absolutely refused to work on board the *Armada Castle*, to put a naval crew on board the *Helsingborg* and work her into Kirkwall. The master protested against being taken into a United Kingdom port, on account of the German proclamation of unrestricted warfare, and both he and his entire crew refused to work the ship. A naval crew was accordingly put on board, but the Swedish crew, which included three women, were not taken off, as Commander England considered that they would eventually consent to manœuvre their own vessel.

¹ The Patrol Lines, numbered I to IV., were frequently changed, the most westerly being No. IV.

It was at this moment that the *Armada Castle's* wireless was temporarily put out of action by a small outbreak of fire on board, and she could not recover touch with the Admiral. In the meantime she continued to chase the *Helsingborg*. Later in the day other vessels were sighted, and Commander England felt bound to intercept them. Afterwards he resumed patrol, leaving the *Helsingborg* to make her own way to Kirkwall, where she arrived safely on the 15th. The *Helsingborg* was going into the danger zone under very unfavourable conditions. Just about the same time an armed guard from the *Alsatian*, which was taking the Norwegian motor-ship *Nosted IV* to Kirkwall, had to leave her at Thorshavn (March 12th) as her crew refused to work her to a British port. She was intercepted later by the SHANNON, but allowed to proceed.¹

On another occasion, an armed guard from the *Ebro* had been sent on March 4th to take the Norwegian sailing vessel *Najade* into Kirkwall, and she was known to be much overdue, until on April 20th the German wireless press announced her "capture." It was afterwards discovered that she had been sunk near Fair Island on March 21st, and nothing more was ever heard of her crew or of the armed guard, who were presumably lost with her. The Admiralty then decided that, unless in very exceptional circumstances, an armed guard should not be sent to take charge of a sailing vessel.

Before the end of March it was decided as far as possible to send an auxiliary patrol trawler to meet every ship with an armed guard on board, to escort her from the 100-fathom line to her port of examination. From April 19th to May 6th the trawlers of the squadron, generally only four on patrol, met and escorted into safety twelve ships with armed guards on board. The importance of this precaution was shown a little later, between May 25th and June 7th, when, owing to bad weather and possibly defective navigation, four ships, under the charge of armed guards, failed to meet their escort and were all sunk, though without loss of life. In the case of the Swedish barquentine *Ines*, sunk on May 29th, the armed guard from the *Orcoma* were made prisoners by the submarine. The crew were picked up later by the armed trawler *Saxon*.

¹ By that date, in certain circumstances, outgoing ships were allowed to give guarantees to call at overseas ports for examination.

To return to the movements of the squadron, at midnight on March 12th the patrols were ordered east again, and returned to their "Line III" (between 14° and 15° W.). On 26th, "B" and "C" Patrols were moved to "Line II" (between 7° W. and $11^{\circ} 10'$ W.), one ship being left to intercept vessels which attempted to hug the south coast of Iceland, but during the day several reports were received of submarines in the neighbourhood of St. Kilda ($58^{\circ} 40'$ N., $8^{\circ} 40'$ W.).¹

As an example of the effect of the more western position of the patrols on "Line IV," it may be noted that, during the week ending March 11th, only twenty-three vessels were intercepted and examined. During the week ending April 1st, when the patrols were on the more eastern "Lines II and III," fifty ships were intercepted. As a whole the number of ships sent in for examination during March was very small compared with previous months. In some degree this was due to the adoption of Halifax as an examination port, but also to the fact that neutral vessels were still refusing to sail.

On March 16th the ACHILLES, 2nd Cruiser Squadron, and the armed boarding steamer *Dundee* were in action with a raider at 4 p.m. in $64^{\circ} 54'$ N., $0^{\circ} 23'$ E. The first news was that the raider had escaped, and wireless silence in the 10th Cruiser Squadron was at once ordered, but on the 17th it was reported that the raider had been sunk.²

On the same day, 16th, the *Motagua* reported being struck by a torpedo forward, but it was afterwards found that she had struck a mine $6\frac{1}{2}$ miles S. 35° W. from Esha Ness. Although considerably damaged, she reached Swarbacks Minn, and three mines were found by the sweepers near the position in which she struck. The port was then closed until extensive sweeping operations had been carried out.

Admiral Tupper had already asked urgently for more Auxiliary Patrol craft or P-boats on the 100-fathom line between St. Kilda and Sulisker, which he called "a highway for German submarines." During the first week in April submarines were engaged three times by armed trawlers attached to the squadron in this very "highway."

¹ Commodore J. S. Luard relinquished his appointment as second-in-command of the squadron on March 23rd, and was succeeded by Rear-Admiral Morgan Singer.

² She was the *Leopard* (ex-Yarrowdale).

On April 5th, at about 5.30 p.m., the *Rushcoe* and *Tenby Castle* intercepted a message from St. Kilda to the effect that an enemy submarine had been sighted on the surface about nine miles north of the island. The submarine was evidently preparing to attack a sailing ship, and the trawlers made off at once to her rescue, but on their way encountered another submarine steering north-east. The *Rushcoe* opened fire without success, and the submarine fired six shots which did no damage, and then submerged.¹

Meanwhile, the sailing vessel *Ebenezer*, a Dane, was sighted, but sank before the trawlers could reach her; the *Rushcoe* afterwards picked up one of her boats with the crew and an armed guard from the *Artois*, which had been on board the *Ebenezer*, but they lost sight of the submarine.

On the 6th at 5.50 p.m., the *Tenby Castle* and the *Walpole* sighted and engaged two submarines on the surface about a mile apart, in $58^{\circ} 22' N.$, $8^{\circ} W.$ The submarines immediately submerged, but in about half an hour one of them came to the surface. The *Tenby Castle* fired, and claimed to have made two hits with her 12-pounder gun and to have sunk the submarine. The *Walpole* fired a depth-charge over the spot where the submarine was last seen, and a thick layer of oil spreading over a large area was noticed. The Admiralty considered the sinking "improbable," but Sub-Lieutenant J. H. Arnold, R.N.R., of the *Tenby Castle*, was decorated, and the crew received the usual reward for "sinking an enemy submarine."²

On the day of this encounter the Admiralty issued orders that none of the trawlers of the 10th Cruiser Squadron patrol were to go south of $58^{\circ} 30' N.$ in future, unless for rescue work or on receipt of distress calls. They were, therefore, directed to work between $58^{\circ} 45' N.$ and $59^{\circ} 15' N.$ and between $7^{\circ} W.$ and $8^{\circ} W.$ The object of this order seems to have been the institution of a submarine patrol from Scapa between St. Kilda and the Flannan Islands. The 10th Submarine Flotilla had arrived at Scapa from the Tees on April 2nd, in order to carry out patrols in northern waters. It was exceedingly difficult to arrive at any system of recognition signals which could be

¹ Later it was discovered that this was the British submarine E44.

² The Court of Inquiry held at the time on board the *Alsatian* was of opinion that the enemy submarine had been destroyed.

understood by the trawlers, and they constantly opened fire on the British submarines.

On the 14th the G9, off the Flannan Islands, was fired on by the *Walpole*, and very narrowly missed. The trawler had just come out of a snowstorm, and at about 1,000 yards' distance she fired ten rounds before the G9 could dive. One shot fell five yards over and another ten yards short. The G9 reported that "considering the state of the wind and sea the shooting was excellent." Apparently some destroyers were sighted from the *Walpole* just before the submarine was seen, but they were too far off to take any action. The *Walpole* claimed to have sunk an enemy submarine, and for a long time the claim was recognised but considered "improbable."

A warning of the presence of British submarines was issued to the trawlers of the 10th Cruiser Squadron¹ on April 23rd, but the proposal to keep surface patrol vessels out of the submarines' areas was recognised as manifestly impossible, and the Commander-in-Chief, Grand Fleet, decided that the responsibility for keeping themselves clear of patrol vessels lay with the submarine commanders themselves. His idea throughout seems to have been that the submarine flotilla should be used as an auxiliary, not as an alternative, to the surface-patrol craft.

As early as April 20th the Admiralty were able to inform the Commander-in-Chief that the enemy knew our submarines were patrolling off St. Kilda (west of the Hebrides), Muckle Flugga (Shetlands), and Udsire Light (coast of Norway), and suggested that the position of the patrols should be shifted. On 23rd some changes were made, but the number of submarines available was very small—only five out of the eleven that formed the flotilla. Two had been sent to the White Sea on the 16th, and practically only two were working in northern waters. No reinforcement was possible at the time.

The period between May 25th–June 7th, already mentioned, when four ships with armed guards on board were sunk, was described by Admiral Tupper as one of "almost unprecedented submarine activity." This was before the oversea convoy system came into force, though the first homeward-bound Atlantic convoy sailed, as an

¹ There were still only six trawlers; the additional twelve, promised in February, did not join the squadron until the beginning of May.

experiment, on May 24th. The German view of ships sailing in company was that it "considerably reduced the opportunities for attack," and also rendered the attack "technically more difficult on account of the escorting destroyers or other craft forming a protective screen."¹

It is observable that almost every ship of the squadron encountering a submarine was alone, either going to her base to coal, or refit, or returning thence to her patrol.² This happened fourteen times between May 1st and July 24th, 1917. Besides the three occasions on which ships (*Hilary*, *Avenger*, and *Otway*) were successfully attacked and sunk, the *Ebro*, *Orvieta*, and *Arlanza* (May 26th, June 4th and 24th) were attacked and narrowly missed by the torpedoes fired at them. The *Changuinola* was also attacked on July 20th, when she was by herself, *en route* to Loch Ewe. On the other occasions, though submarines were sighted, they did not attack, but the *Patuca* opened fire on one of them on June 4th, without effect.

On May 25th, the *Hilary*, on her way to Swarbacks Minn for coaling, was torpedoed and sunk in 60° 40' N., 0° 2' W. At 7.30 a.m. her speed had been reduced to ten knots to drop paravanes, and just as it was increased again to 12.5 knots, a torpedo struck the ship on the port side before the boiler room. A minute later the water was up to the furnaces, putting out the fires, and the crew were ordered to take up their "abandon ship" stations. The wireless operator reported his aerial damaged, but managed to send an emergency signal to the GIBRALTAR. The *Hilary* quickly lost way and boats were lowered, but just as the No. 3 boat was alongside a second torpedo struck the ship on the port side nearly under the boat; four men were killed and three injured. A few shots were fired at the submarine's periscope, but without effect. The periscope could be seen plainly as the submarine cruised round the ship, and Captain Dean, Lieutenant-Commander Wray and Steward Edwards were the only three persons who remained on board by 8.30 a.m. Lieutenant-Commander Wray fired several shots from a 6-pounder without hitting the submarine, and at about

¹ Gayer, "Summary of German Submarine Operations," in *Proceedings of the U.S. Naval Institute*, April 1926, p. 655.

² The *Hildebrand* was with the convoy attacked by submarine on October 2nd, when the cruiser DRAKE was sunk (see p. 207).

8.30 a third torpedo was fired, which hit the ship on the starboard side of the boiler-room.

The captain described his escape thus :

" At about 9.12 a.m. it was apparent that the ship was going down quickly ; we then went to the promenade deck, and the water having risen to that level, we got in and swam some twenty yards clear when at 9.15 the ship sank. Lieutenant Harris in a boat somewhat overloaded, having picked up many of those from the torpedoed boat, had kept close by the ship, and after she sank he closed two boats (which had been stowed inboard and floated clear), and by my order he distributed some men into each of them. One went to take the men who had escaped on Carley floats, the other took Lieutenant-Commander Wray, Steward Edwards and myself on board. The submarine came to the surface soon after the ship sank and hunted amongst the wreckage picking up objects, she then went to the two Carley floats in succession, and obtained from the officers in them particulars of the *Hilary's* name, tonnage, and armament. The submarine then went off to south-west, and our boats made their way towards the Shetlands."

All the seven boats were eventually rescued by the armed drifter *Maggie Bruce* and the destroyer *SARPEDON*.

The two officers who were interrogated by the captain of the submarine were the ship's surgeon and one of the lieutenants. The information given was as evasive as it could be with a pistol held to their heads, but Captain Dean was certain that his confidential books had all gone down in the ship, and that his officers could not have refused the information they gave with the submarine's gun ready to blow all their boats out of the water.

On June 14th, the *Avenger* was on her way to Scapa to oil, and with the loss of the *Hilary* fresh in his mind, Admiral Tupper had asked for two Grand Fleet destroyers to screen her into port. She expected to meet the destroyers *NOBLE* and *NESSUS* at 3 a.m. on June 14th in 60° N., 4° W., but they were still thirty miles off, when at 2 a.m. in 61° 3' N., 3° 57' W. the ship was struck by a torpedo on the port side. The conning-tower and periscope of the submarine were sighted only for a moment before the

shock of the torpedo was felt. The *Avenger* appeared to be settling rapidly, and at about 2.30 Captain A. L. Ashby gave the order to abandon ship, remaining on board himself with four officers and two ratings.¹ At 3.20 the periscope of the submarine was seen coming up astern, but the 6-inch guns could not be used, and only a few rounds were fired from the port 3-pounder, unfortunately without success. The submarine then submerged and was not afterwards seen. It could only be supposed that she had no more torpedoes. At about 4 a.m. the NOBLE and NESSUS arrived, took the men off the boats and formed a screen for the ship, which her captain still hoped to save.

At about 5.30 the NOBLE sighted the periscope of the submarine, about a mile on the port beam of the *Avenger*, and both the destroyers dropped a depth charge, but did not know the result. The submarine was not seen again. In spite of such precautions as could be taken, the water was rising rapidly in the *Avenger*, and at 8.30 a.m. the captain reluctantly decided to abandon the ship until tugs with working parties could arrive. At the same time the RELENTLESS with three other destroyers came to assist in the screen, but by 10.50 the *Avenger* was so undoubtedly sinking that the NOBLE and NESSUS, with the cruiser's officers and crew, left for Swarbacks Minn, and the RELENTLESS reported that she sank altogether at 12.25 p.m.

Again Admiral Tupper urged that his ships required the protection of destroyers, sloops, or other vessels of the requisite speed, only to be informed that they were more urgently needed elsewhere.

The patrols continued to keep out to the westward, and the number of ships intercepted was noticeably smaller. During July enemy submarines were as active as ever off the west coast of Scotland, and on the 22nd the *Otway* was torpedoed in 58° 54' N., 6° 28' W. at 10.25 p.m. She was rejoining her patrol from Loch Ewe and left at 2.45 p.m. The squadron trawlers had been directed to screen her as far as possible, but she does not appear to have reached the area in which they were working. At 10.13 p.m. the signalman on watch observed a periscope a little before the port beam; the commodore in command, Philip Colomb, ordered the ship to be turned

¹ Only one man was lost—killed by the explosion.

away, and one round was fired by the 6-pounder gun in the *Otway*, but without effect. In a few moments a torpedo struck the ship astern, killing ten men and flooding the whole of the ship abaft the engine room. In spite of every effort, the engine room itself was rapidly flooded, and the ship began to sink. Commodore Colomb shaped course for North Rona Island, leaving the submarine astern, and orders were given for the engines to be worked as fast as possible, but the *Otway* soon became unmanageable, and orders were given to abandon ship. The Commodore, First Lieutenant, and Commodore's steward remained on board, prepared to attack a hostile boarding party from the submarine, and they threw all the secret books overboard. Shortly after midnight the ship appeared to be rapidly settling down, and the three were taken off by one of the boats just in time, as the ship sank by the stern at 12.15 a.m.

Boats and rafts remained together, and at 6.15 a.m. on July 23rd they were picked up by the whaler *Rorqual*, and taken to Stornoway. The loss of life was greater than in either of the two ships recently sunk. Besides ten men killed in the explosion, five were seriously injured.

Once more Admiral Tupper wrote, on July 24th, to urge the provision of a destroyer escort for his ships when going to and from their coaling bases, and he added a list of the number of submarines that the cruisers had encountered since May. He was told by the Commander-in-Chief, Grand Fleet, on August 5th, that he should make arrangements for his incoming vessels to join one of the North Atlantic convoys at a pre-arranged rendezvous, and that his outgoing vessels should make use of the destroyer escorts leaving Lough Swilly to meet incoming convoys. It was not possible, he was further informed, to detail Grand Fleet destroyers for the particular purpose of escorting ships of the 10th Cruiser Squadron. Twelve Grand Fleet destroyers were already stationed at Buncrana, and the number could not be increased.¹

On September 1st Admiral Tupper wrote that this plan was not altogether satisfactory, as it involved a great waste of time in the case of inward-bound ships, owing

¹ On August 20th he received instructions from the Admiralty that his ships going to or from their base ports should join the mercantile convoys.

to the large detour and slow speed of the convoys. For the outward-bound ships the delay was even greater, as the cruisers were obliged to go to the port of assembly for the convoy and were often kept waiting four or five days, in addition to slow speed and the repeated detour of as much as 200 or 300 miles to the westward before they could take up their patrols. He proposed that, unless destroyers could be detailed for escort, or trawlers sent to patrol their route, it would be preferable to accept the risk and allow ships to proceed to their bases as before without escort.

He also suggested that, as the patrols were working in a westerly position, Loch Ewe or Lough Swilly would be preferable to Swarbacks Minn as a northern coaling base. His table of time lost by ships joining convoys showed that on August 19th the convoy dispersed almost immediately after leaving Lough Swilly, owing to submarine attack, and that the *Changuinola*, which was with them, narrowly escaped being torpedoed, and eventually proceeded by herself to her patrol. On August 26th the *Patuca*, after spending two days picking up a convoy which was then ordered to go south of Ireland, found that she was running short of coal, and was obliged to continue her journey to the Clyde alone.¹ The Admiral was struggling with great difficulties, and to understand the importance he attached to loss of time the sudden drastic reduction of his force must be taken into consideration. In addition to the loss of his three cruisers, it had been decided at a conference held at the Admiralty on June 27th that a great reduction of the force was necessary. Eight ships would be required for the Atlantic convoy. The *Andes*, *Almanzora*, *Arlanza*, *Virginian*, *Kildonan Castle*, *Armadale Castle*, and *Columbella* were selected.²

By September 20th, besides the eleven ships already detached on convoy service, the *Patuca* had been detailed to go to Dakar, and the *Orcoma* to meet vessels from Archangel, both on convoy duty. Eight ships were available for patrol work, but as three of them were due

¹ There were other complications, when the captain of the cruiser in charge of the convoy was found to be junior to the captain of the attached cruiser.

² The *Teutonic*, after being laid up since December 1916, recommissioned on 2nd October, but was temporarily detached for convoy duty to the White Sea.

for docking, only an average of five would be actually on patrol, at all events for two or three weeks to come.¹

On September 21st the Commander-in-Chief and the Admiralty agreed that the ships of the squadron should go to and from their bases without escort, taking advantage as far as possible of the dark hours for crossing dangerous zones; and avoiding the period of full moon.

On October 2nd the *Hildebrand* was on her way to the Clyde in company with a convoy, which was attacked by a submarine, and the cruiser DRAKE, in charge of the convoy, was torpedoed. Two other ships were mined in the vicinity, but the *Hildebrand* arrived safely at the Clyde. The DRAKE managed to get in to Rathlin Sound, where she afterwards capsized while at anchor.

The tale of casualties was not yet complete. The two French ships attached to the squadron, *Artois* and *Champagne*, had been lately recommissioned by British officers and men, and on October 9th, while rejoining her patrol from Liverpool, the *Champagne* was torpedoed and sunk by an enemy submarine at about 6.30 a.m. in 54° 10' N., 5° 32' W. (6 miles off St. John's Point, County Down). The boats had hardly got away from the ship after she had been hit by two torpedoes, when a third torpedo broke her in two, about twenty minutes after the first attack. Five officers and fifty-three men were lost. Owing to the heavy weather, the loaded condition of the boats, and the amount of wreckage, there was great difficulty in picking up survivors.² All the boats were rescued. One arrived under her own sail at Port Erin, Isle of Man; the others were towed in by trawlers and a life-boat from the island. Two rafts were picked up by merchant vessels.

Between October 5th and 9th, patrols were again disposed to intercept a German raider reported to be outward bound; five ships were sent south of Iceland, and one to the north (65° to 66° 40' N., between 11° and 12° W.), but on the 7th this ship was moved to the neighbourhood of Revsnaes Light as the 3rd and 4th Light Cruiser Squadrons were patrolling off Långanaes and

¹ The average number detached for convoy service from July onwards was twelve.

² Apparently the ship had several collapsible boats which could not be got out in time.

Stokanaes (Iceland S.E.) respectively. They were withdrawn on the evening of October 9th. No raider was sighted.

The fate of the 10th Cruiser Squadron was practically settled at a conference held on board the QUEEN ELIZABETH at Rosyth on August 24th, 1917. Those present at the conference were :

Admiral Sir John Jellicoe (First Sea Lord).

Admiral Sir David Beatty (Commander-in-Chief, Grand Fleet).

Admiral Sir Charles Madden (Second-in-Command Grand Fleet).

Rear-Admiral Sir Osmond de B. Brock (Chief of Staff to Commander-in-Chief, Grand Fleet).

Rear-Admiral George P. W. Hope (Director of Operations Division).

The First Sea Lord referred to the necessity for increasing the number of cruisers available for convoy duty if the Admiralty were to attempt to convoy outward-bound as well as homeward-bound traffic. He thought that, if all traffic could come under convoy, the Commander-in-Chief would agree that the whole of the 10th Cruiser Squadron would be better employed on convoy work. The chance of catching a surface raider was already very small, owing to the weakness of the patrol line.

The Commander-in-Chief thought that the squadron was not very efficaciously employed against raiders. He considered that the only chance of catching raiders was to obtain information beforehand and put out patrols, but the First Sea Lord thought that the likelihood of obtaining sufficient information beforehand was very remote ; the only thing to depend upon was either the 10th Cruiser Squadron or the periodical light cruiser patrols. He also observed that the Foreign Office would deprecate at the moment the entire withdrawal of the squadron, but that Admiral Mayo, on his arrival in England, might be able to give information to show that there was no longer any necessity to maintain the blockading squadron. It was then decided to wait for the arrival of the American officers, and that, if the measures taken by America were enough in themselves to render the blockade efficient, the

10th Cruiser Squadron should be withdrawn and employed entirely on convoy duty.

An Inter-Allied naval conference was held on September 4th and 5th,¹ after the arrival of Admiral Mayo, and on October 30th an Admiralty memorandum stated that the blockade was rendered practically complete by our agreements with neutral steamship lines, and by the bunker policy of Great Britain and the United States, which made it, humanly speaking, impossible for any neutral vessel to carry out a voyage not approved by the Allies. The last serious attempt to run the blockade had been made in the autumn of 1916 when the *Ada* got through twice and the *Atlanten* once; on each occasion from a United States port.

The number of vessels intercepted by the squadron, between August 4th and October 14th, 1917, was 147 (including 14 for Belgian relief). Only two vessels were sent in for examination, and one of them had been sunk by a submarine. The remainder had either called already at examination ports, or were on approved voyages.² The average number of ships of the squadron employed on patrol duties during the ten weeks under consideration was five. As the line from the north of Scotland to Iceland was 450 miles long and from Iceland to Greenland 160 miles, it was apparent that so weak a patrol could be avoided without much trouble. In addition, the constant risk from submarine attack run by the cruisers of the squadron had to be taken into consideration.

The Admiralty concluded that the squadron was no longer required for blockade duty, but it was considered that some form of patrol in northern waters should be maintained, in order to make wireless signals. The reason was that when the Germans sent out a raider they intercepted the position of the patrol given by our wireless signals, and we were generally warned of the presence of a raider by their repeating our signals to the outgoing or incoming vessel. It was, therefore, considered worth while to maintain a few ships and trawlers to simulate the old patrol. On November 2nd the question was discussed

¹ Sir Eric Geddes was appointed First Lord of the Admiralty on September 6th, 1917, in succession to Sir Edward Carson, who resigned in July.

² Over 300 neutral vessels were still detained in U.S. and Canadian ports, pending agreements.

at a Staff Meeting at the Admiralty, and on the 6th a memorandum was sent to the Commander-in-Chief proposing to reduce the squadron to three ships and twelve trawlers, and to combine it with the two remaining "Minotaurs" of the 2nd Cruiser Squadron under one admiral.

On the 15th the Commander-in-Chief concurred in this suggestion, and proposed that the reconstituted squadron should be based on Scapa and that periodical sweeps should be carried out towards Iceland by two vessels at a time, remaining at sea for about a week. Destroyer escort could be provided as far as the Butt of Lewis. He proposed also that the six trawlers released should be employed on the Lerwick-Bergen convoy route, where they would be of great value.¹

On November 29th the Admiralty approved of the abolition of the 10th Cruiser Squadron and the reconstitution of the 2nd Cruiser Squadron, to consist in future of three armed merchant cruisers, the *Alsatian*, *Orvieto*, and *Teutonic*; two cruisers, the MINOTAUR and SHANNON; two armed boarding steamers, the *Amsterdam* and *Duke of Cornwall*; under the command of Admiral Sir Reginald Tupper. This came into effect on December 8th, 1917.²

Out of the seventeen armed trawlers then attached to the squadron, twelve were sent to carry out anti-submarine operations and escort duties west of the Hebrides, under the orders of the Rear-Admiral, Stornoway, and were based on Oban. The remaining five were sent to Lerwick for the Bergen convoy work.

So came to no inglorious end the 10th Cruiser Squadron.³ Only an echo of the squadron still survived. On December 14th the *Alsatian* and *Teutonic* were ordered to patrol between the Hebrides and Iceland, to intercept expected enemy raiders and to give the enemy the impression that the patrol in those waters was being main-

¹ The trawlers were also immediately requested for the east coast, the south coast, and in the Irish Sea.

² Rear-Admiral Morgan Singer was appointed to assist the Commander-in-Chief, North America and West Indies Station.

³ Admiral Tupper had already been given a K.C.B. in June 1917, and the list in December of well-deserved and hardly won honours for the officers and men of the squadron was long.

The last of the armed merchant cruisers, *Alsatian*, *Teutonic*, and *Orvieto*, were allocated to the Atlantic Convoy Service by the middle of February 1918, and were replaced in the 2nd Cruiser Squadron by the cruisers *ACHILLES* and *COCHRANE* from the North America and West Indies Station.

tained at full strength. Code messages were to be made from positions representing the patrol line, and were to be similar in form to those ordinarily made by the 10th Cruiser Squadron, including position, course, and speed messages. Call-signs, note frequency, and operator were to be changed on each occasion, and no call-sign was to be used in more than one position. One or two dummy messages were to be made for Longhope to answer. The raider was supposed to be the *Wolf*, and a captured Japanese vessel, the *Hitachi Maru*, was also expected to make an attempt to get through to Germany about the same time.

The *Alsatian* sailed from Liverpool and the *Teutonic* from Scapa on December 16th; the rendezvous between them was effected on the 20th, in very bad weather, and the *Alsatian* was ordered to Scapa on the 21st.

It must have been a strange and somewhat uncanny experience for those two ships to be calling to their sisters of the squadron, knowing that they could receive only a simulated reply from ships far out of their reach by wireless or any other human means. It is not recorded whether the enemy was deceived.

Between January 1st and December 8th, 1917, 2,079 vessels were intercepted by the squadron, of which 176 were sent in under armed guard. The reduction in numbers, compared with those of the two preceding years, was considerable, but easily accounted for by the establishment of overseas examination ports, the methods adopted by the United States to enforce the blockade, the weakening of the squadron by the sinking of four cruisers, and the fact that from the end of July twelve were detached permanently on convoy duty. The squadron with its crews of merchant seamen had earned the gratitude of the nation.

CHAPTER VIII

DAZZLE PAINTING

A CONSEQUENCE of the war, entirely unforeseen, was a complete transformation in the appearance of the British Mercantile Marine, hitherto so sombre and austere. The ships sailed the seas with hulls and superstructures, and even funnels, masts, and boats, painted in a variety of strident colours, white, black, green, blue, and grey, either in long streaks or large irregular patches, or chess-board squares. It might have seemed at first glance that this was the result of madness without method, but, in fact, orderly method was the basis of the whole practice of the deception. The idea was new ; it emerged out of the conditions of the war, and particularly of the appearance of the German submarine as a weapon for the destruction of British and Allied ocean-borne commerce.

The Admiralty had from time to time experimented with the painting of warships, with the object of reducing their visibility—quite a different problem. It had been noticed at naval festivities, when warships of different nations anchored in company—as at the opening of the Kiel Canal in 1895—that the attractive peace colouring of the British warships, cream funnels and black hulls, made them much more conspicuous than the French and German warships, which had already adopted a colouring of uniform grey, the shade differing somewhat in the two cases. Many changes were made in the schemes for painting warships, and at the outbreak of war in 1914, an inquiry was made into the whole question of visibility.

Large objects obtain their appearance of relief mainly by the contrasts of light and shade, and in every vessel there are areas upon which shadow is thrown. This is especially the case with large passenger ships, built with high promenade and hurricane decks. A distinguished American artist, Mr. Abbott H. Thayer, had propounded what became known as Thayer's Law of Shadow Elimina-

tion, and some small measure of success was gained by painting white the undersides of a passenger deck and other areas upon which shadows fall. However, it was found that no paint, which was itself dependent on the sky for light, could overcome the visibility of a shadow of marked density sufficiently to be of practical service. In one instance only was it admittedly a useful means of deception, where a vessel had a marked flare to the bow. By painting the upper portion of the hull white and the lower portion grey or blue, the appearance of a flare was largely neutralised, the effect being a marked flattening of the bows, and consequent alteration in the character of the vessel. This result was due to the strong reflected light cast on the flare of the bow, and consequent illumination of the white paint, and was most conspicuous when the ship was under way.

In range-finding at sea, the factors involved are (*a*) the determination of distance, and (*b*) the determination of the rate and direction of relative movement. If by giving a deceptive appearance to a ship, judgment in either of these two factors can be affected, a valuable result is obtained. It is well known that animals, and more frequently insects, receive defensive protection from nature, which has given them colour and markings harmonising with their accustomed surroundings. The Admiralty received suggestions from Mr. J. Graham Kerr, Regius Professor of Zoology at the University of Glasgow, who had made exhaustive studies into the obliterative colouring of animals.

In seeking to apply those studies to the problems of defence at sea, he came to the conclusion that the simplest of nature's methods of protective concealment, namely the exact matching of tint with the normal background, must be ruled out, and that only two principles could be regarded as worth adoption. The first and most important of these was the breaking up of the continuity of form by violently contrasting pigments, and the second was the employment of compensative shading on the Thayer principle. By such means Professor Kerr maintained that it was feasible to diminish greatly the conspicuousness of a distant ship and to stultify the enemy's range-finders by confusing the details, especially all vertical lines. The essential points of his proposals, as finally set forth in

a letter to the Admiralty dated September 24th, 1914, were promulgated to the Fleet on November 10th of that year. Unfortunately for any success that might have attended these efforts, no provision was made for the application under skilled supervision of the principles laid down, and in the summer of 1915 the method of parti-colouring thus tentatively employed was abandoned, the Admiralty arriving at the conclusion that a scheme of uniform colourisation was the most serviceable for His Majesty's ships.

Dazzle painting was only developed after three years of war. The scheme as devised and elaborated by Lieutenant-Commander Norman Wilkinson, R.N.V.R., did not aim at invisibility, or even at reducing visibility. It frankly accepted the fact that an invisible ship was an impossibility, even had such a craft been desirable. But to some extent at least it was based upon principles similar to those enunciated by Professor Kerr. As the point became the subject of some public discussion, it may be well to compare two short quotations from Mr. Kerr's letter to the Admiralty—already mentioned—with passages from an account by Lieutenant-Commander Wilkinson¹ of his own system. The first-named quotations are as follows :

(1) "It is essential to break up the regular continuity of the outline, and this can easily be effected by strongly contrasting shades. The same applies to the surface generally—a continuous uniform shade renders conspicuous . . . this also can be counteracted by violently contrasting pigments."

(2) "The outline more particularly should be broken up by patches of white. . . . The bow, stern, and upper line should also be broken up by very large patches of white. . . . The sides of the ship should also be broken up by large patches of white, and what has been said naturally applies also to turrets and other parts of the upper works."

The following are the corresponding citations from Lieutenant-Commander Wilkinson's paper :

(1) "Dazzle painting is a method to produce an effect (by paint) in such a way that all accepted forms of a ship

¹ Paper read before the North-East Coast Institution of Engineers and Shipbuilders, July 10th, 1919.

are broken up by masses of strongly contrasting colour. . . . If the accepted form of a vessel could be so completely broken up by contrasting colours and tones of paint as to destroy her outline and general shape, a large point would have been gained towards increasing the difficulties of attack."

(2) "For a time, in the early stages of the scheme, I hesitated to use white paint for various reasons, but after considerable experience it was found to be the best 'colour' for those parts of the ship intended to be invisible."

The similarity of statement is obvious, and the logical conclusion seems to be that there was to some extent a common basis for the plan of protection partially tested by the Admiralty in the early days of the war and that which was adopted at a much later stage.

Not only did dazzle painting accept the fact of visibility, but it had nothing in common with camouflage as practised on land, though often the two parts were confused. The whole object of camouflage was concealment—a battery of artillery, for instance, painted irregularly with green and brown, or covered by branches bearing leaves, took the colour of the surrounding fields and hedges, and was difficult to detect from an aeroplane overhead or an enemy observation-post in front. Camouflage was an extension of nature's system of protective colouring. Dazzle painting aimed not at concealment, but at a baffling transformation.

On land and at sea the conditions of visibility are entirely different. On land the relative values of colours are nearly constant. At sea they change with every change in the light, the sky, and the water. In most cases, a passing vessel is observed from an elevated station, such as the bridge or look-out of another ship, or a high point ashore, and if the hull is painted in drab tones to assimilate with the background of the sea, visibility is low. A submarine's periscope, however, discloses every vessel with a background of sky and practically no foreground of sea, in which circumstances the vessel appears in the mirror as a dark silhouette. There is no average sky-colour for an ocean-going trader; in the North Sea the horizon is commonly misty and dull, in the Mediterranean it presents a sharp line, with deep blue sky above, and hour by hour the sky may vary.

In addition, smoke rising from the funnel, especially in the presence of a following wind, and the bow wave and stern wash of a ship reveal its position to a vigilant enemy; and even if invisibility beyond a comparatively short distance were possible of attainment, there still remains at an enemy's disposal the Director-Hydrophone, an instrument which was greatly developed during the war, to disclose to those listening the general direction in which a ship or a convoy is proceeding. Once a ship was seen, it little mattered, for an enemy's purpose, what her degree of visibility might be; but a wide field was offered for deception if by any means a ship could be so transformed in appearance that an enemy submarine commander, wishing to take up a position from which to attack, would have difficulty in deciding upon what course she was steaming.

Dazzle painting of ships was developed with the set purpose of causing this confusion, and making it impossible for a submarine to estimate the course of a distant vessel with any accuracy. It gave no concealment, and offered no defence at short range; though as experience was gained and patterns were improved, there was reason to believe that in some cases ships were saved from successful torpedo attack by the apparent shift in their true course, the torpedoes passing harmlessly by. The confusion sought was gained by:

1. Breaking up the surface of a ship by the use of violently contrasting pigments.
2. Painting the bow so that its sharp edge appeared to be moved several feet to the sides.
3. Providing wide strips of different colours, carried up from the hull over superstructure, funnels, bridge, and boats, thus creating such a medley that a submarine commander at the periscope should be at a loss to know upon what particular part of a ship he was sighting.

In May 1917, Lieutenant-Commander Norman Wilkinson, an artist who before the war had had experience of sea coloration and atmosphere as a marine painter, laid his scheme of dazzle painting before the Admiralty. It was, of course, obvious that successful submarine attack depended largely upon the enemy commander obtaining a favourable position for firing a torpedo. If, by reason of the deception caused, the

position obtained was bad, the submarine had little if any likelihood of shortening her range owing to insufficient under-water speed. Should she come up and attempt to overtake the ship by surface speed, then the attacked ship, if armed, had a good chance of escaping.

The first experiment in dazzle painting was made in the summer of 1917, with a ship employed on a regular run between Chatham, Portsmouth, Plymouth, Pembroke and Queenstown, and therefore constantly in the danger zone. This was quickly followed by Admiralty orders to paint fifty transports as rapidly as opportunity offered. A different design of painting was adopted in each case. As was to be expected, many designs proved to be ineffective, and there was from the outset a conflict of opinion as to the value of dazzle painting. Other designs, however, succeeded in creating confusion in the minds of observers, both as to the type of ship and the course taken, which was the object sought. This was shown in a number of the reports received, from which the following extracts are made :

“ H.M.S. MARTIN, *September 27th, 1917.*

“ Sighted *Clam* about five miles, four points on starboard bow, and for some time could make nothing of her ; when about five miles distant I decided it was a tug towing a lighter with a short drift of tow rope. The lighter, towing badly and working up to the windward, appeared to be steering an opposite course. It was not until she was within half a mile that I could make out she was one ship, steering a course at right angles, crossing from starboard to port. The dark painted stripes on her after-part made her stern appear her bow, and a broad end of green paint amidships looked like a patch of water. The weather was light and visibility good.”

A lightship reported of the same vessel that from two to three miles distant the *Clam* appeared as a wreck on her beam ends, and patches of paint on the bows caused an absence of perspective.

“ S.N.O. ARDROSSAN, *September 25th, 1917.*

“ In all cases, more especially when viewed from a distance of about three miles, the vessels (unknown) presented an appearance of being grotesquely out of all proportion.

When approaching, it was not until the vessels were quite near that it was possible to see their bows; even when quite close, about half a mile, the bows seemed to be directly under the bridge."

"H.M.T. ANZAC II, *August 15th, 1917.*

"Course she was steering was particularly deceptive. At times, principally when viewed from ahead, she appeared to be steering as much as 6 points to port of her actual course. It was difficult to tell what type of ship she was. At times she appeared to be only half a ship, i.e., a vessel with her bow and stern cut off. When I was right ahead of her she was heading directly towards me, sun right ahead on her as before, she appeared to be heading 6 points off her course to port. With the sun on her port beam, my position also on port beam, she appeared to be ashore, with a broken back, and a house which stands on her after-deck abaft the engine-room looked like the top of a rock that she was lying against."

"CAPT. BARTLETT, S.S. MILLAIS, *September 25th, 1917.*

"Convoy was observed by three destroyers' officers running trials at distances varying from two to four miles. All these officers agreed that the dazzle painting of the *Millais* was a huge success; they state that it was quite impossible to state her course even approximately, except when the sun lit up her masts. Lieutenant-Commander Harrison stated that he could not tell her course within 12 points."

"H.M.S. MANTUA, 13 Q.B. Convoy Section.

"The *Ascanius* sometimes appears to be going in the opposite direction, and in misty weather her course cannot be judged within 8 points. On a light moonlight night she was invisible at one mile."

In October 1917, after a few months' experience, the Admiralty, under powers conferred by the Defence of the Realm Act, decided that the whole of the British Mercantile Marine should be dazzle painted, as well as a number of war vessels employed on convoy or other duty. By that time the dazzle painting section had to be placed on an established footing. The Royal Academy of Arts gave

accommodation at Burlington House, London, in the lower rooms formerly used by art students, where Lieutenant-Commander Norman Wilkinson acted as officer in charge of the Dazzle Scheme, with a staff which by the following July had increased to twenty-five R.N.V.R. officers and twenty-four civilians, the annual charge being approximately £10,500. Officers were appointed to represent the Director of Naval Equipment at all the principal shipping ports, about twenty in number.

It had early been found that different types of vessels required different treatment, and the procedure adopted was to classify merchant shipping into, roughly, thirty groups. For each group numbers of designs were from time to time prepared, and these were issued to the officer at the shipping ports for adoption as was most suitable. At Burlington House a large number of models of ships were made and were dazzle painted for experimental purposes, the distortion in appearance being judged by observation through a periscope as the models, placed on a rotating table with surface representing the sea, were headed to different points of the compass.

An advantage enjoyed by dazzle painting as a defensive measure was its comparatively small cost. The ships had in any case to be painted at intervals, and it was found that the work could be done satisfactorily during loading and unloading in port, with little delay, and in many cases without any delay at all. The plan selected was laid out on the hull and upper works of the ships. The Government at the outset bore the first cost of painting, and two-thirds of the cost in the case of renewals, for all requisitioned vessels. The extra cost of dazzle painting merchant vessels came approximately to £125 per vessel on an average. On the basis of renewal twice a year, the additional cost was assessed at something between £250 and £300 per ship per annum.

For warships, separate designs and models were prepared, though—for reasons to be stated later—the adoption of dazzle painting for His Majesty's ships was much less general than in the case of the merchant service. Up to the end of October 1918, 251 warships and 2,719 merchant vessels had been dazzle painted in addition to a number of foreign merchant ships.

In the earlier stages of dazzle painting, the practice was

to use large black masses with drab or coloured intervals, and in the course of development experiments were made with vivid colourings, red being the most conspicuous. These, however, proved to be less satisfactory, and after a few months were abandoned, and the standard colours became black, white, grey, and various shades of blue and green, one object of the blue and green being to make the lighter parts of the ship melt into the sky at different periods of the day. The first considerable advance in dazzle painting resulted from the adoption of stripe patterns. These, when first used experimentally, were not sufficiently heavy to counteract the solidity of the ship, but with the employment of large and bold designs, the stripes being carried over the hull and the whole of the upper works, the detail of a ship seen at a long range became greatly confused. Stripes broke up all form more effectively than the big patterns of curves.

Some of the largest ships afloat were dazzle painted, among them the Cunard liners *Mauretania*, treated with a rising succession of black and light squares to destroy her perspective, and the *Aquitania*, whose enormous hull was covered with stripes, irregular areas, and patches. The American *Leviathan* was also treated.

Opinions upon the result of dazzle painting continued to be very divided. In a minute addressed to the Assistant Chief of Naval Staff on April 15th, 1918, the First Lord of the Admiralty noted that "no conclusive case for or against this confusional device has been made out," adding that "it seemed hardly possible to arrive at a conclusion unless the actual working of the device is scrutinised over a considerable period, and the results collated after conference. Accordingly a small "Committee on Dazzle Painting" was set up, consisting of the Director of Naval Equipment, the Director of Statistics, and representatives of the First Lord and A.C.N.S. It was instructed :

- (a) To consider in detail the results from dazzle painting so far as then collected ;
- (b) To consider each month the results of dazzle painting as collected ;
- (c) To conduct investigations as to the circumstances under which the various designs give certain results ;

- (d) To report what their conclusions are, and whether, in their opinion, the results justify the time and labour involved.

The committee reported on July 31st, 1918, and the collection of statistics of ships attacked and sinkings was continued up till the end of October 1918, within eleven days of the signature of the armistice.

It was found that the experience gained in the painting of merchant ships was too short for definite conclusions to be reached. The opinion of the majority of masters and officers of the Mercantile Marine favoured dazzle painting, which they looked upon as a substantial aid against submarine attacks. Such a consensus of opinion was a fact of admitted significance, as theirs was the service most affected. A few extracts are given below of later date than those already given :

“ At a distance of 7 cables by day and 3 cables by night, it is frequently impossible to tell whether vessel (s.s. *War Soldier*) is approaching or going away.”

“ Unknown dazzle-painted vessel seen about four miles off Cape Town appeared to be in a mirage. Her direction could not be judged.”

“ S.s. *Alban*, owing to dazzle painting, frequently appears to be 8 to 12 points from her mean course.”

“ On two occasions have avoided submarine, when an accompanying ‘grey’ vessel was torpedoed. Consider dazzle-painting scheme of my ship most effective.”

“ S.s. *Bayano* seen at sea appeared very much smaller than she really was. Dazzle scheme highly thought of, and mention made of difficulty of telling a vessel’s course, and whether she has one or two funnels.”

The committee stated in their report :

“ In our opinion, from a careful examination of the whole of the evidence, no definite case on material grounds can be made out for any benefit in this respect from this form (dazzle painting) of camouflage. At the same time the statistics do not prove that it is disadvantageous, and

in view of the undoubted increase in the confidence and morale of officers and crews of the Mercantile Marine resulting from this painting, which is a highly important consideration, together with the small extra cost per ship, it may be found advisable to continue the system, though probably not under the present wholesale conditions."

As to warships, a series of trials was carried out in the Grand Fleet while the committee had the matter under consideration, with a view to testing the effect of dazzle painting on battleships and light cruisers, the observations being made on both dazzle-painted and service-grey warships. The Admiral Commanding First Battle Squadron, from reports which reached him, arrived at the conclusion that dazzle painting of a battleship or cruiser rendered attack by submarine more difficult than under ordinary conditions, as it increased the difficulty of judging inclinations and speed. At long range, 10,000 yards and over, dazzle painting had no effect on estimation of inclination. It rendered a ship more conspicuous in clear weather at long ranges, and in mists, night, or low visibility at short ranges, this being due to colour contrasts. It was recommended that ships in the line should not be dazzle painted, but only those which usually operated alone. The effect of dazzle painting, it was found, was very largely reduced if masts or funnels were widely spaced, or if there was well-defined superstructure at the end of a ship, and when two or more ships were in the line ahead. The Admiral was of opinion that light cruisers should not be dazzle painted, on the lines then adopted for the **FEARLESS** and **SOUTHAMPTON**.

In these conclusions the Commander-in-Chief of the Grand Fleet concurred, holding that, with ships in line under certain circumstances, dazzle painting might be a positive disadvantage, and that white should as far as possible be eliminated from any colour scheme. The battleships **REVENGE** and the **RAMILLES**, which had been experimentally dazzle painted, were soon afterwards restored to service grey.

Only in a few cases did the reports of officers of surface warships attribute importance to dazzle painting, except as a means of altering at long ranges the apparent character of a ship. In certain instances it may have lengthened

observations, but it did not defeat the accuracy of observations obtained for deciding a ship's course. Of eight destroyers observing at sea, one only reported a difficulty in estimating the inclination of dazzle-painted ships. Five reported no difference in the dazzle-painted and normal-painted types, and considered that, if anything, the white patches on the dazzle-painted ships made them more conspicuous. Largely as a result of the reports by naval officers, the use of white in dazzle painting was ultimately abandoned.

The reports of officers commanding British submarines allowed little value to dazzle painting, chiefly on the grounds that (1) it did not give concealment when a ship was seen (as always in a periscope) against a background of sky; (2) the actual course and speed of a vessel are principally defined at a distance by the masts, funnels, and deck structures, and the assistance in sighting obtained from these is little affected by dazzle painting; (3) by a rough plotting system a submarine commander, having sufficient speed, can ensure that he gets position ahead of the vessel to be attacked.

From these reports the following extracts are taken :

“Dazzle painting has no effect in estimating the course of a vessel with more than one mast. Under certain conditions, the course of a vessel with only one mast may be difficult to estimate.”

“The general opinion seems to be that a light grey with hinged masts would be more effective. The dazzle painting of H.M.S. TALISMAN through a periscope gives a slightly distorted appearance, but the course is obtained as usual from her masts and funnels.

“It is of little use for ships in company, but tends to confusion when a single merchant vessel is zigzagging.”

“Sighted two large dazzle-painted steamers, but do not consider the camouflage would in any way have handicapped my attacking them. Visibility fair, light rather bad.”

“In bright lights, ships are often not found to be dazzle painted until within 2,000 to 3,000 yards, the course having usually by this time been obtained by plotting.

In misty weather, or when visibility is small, dazzle painting in light colours is undoubtedly effective, and makes course estimating difficult."

"When observing ships with sun shining on them, the dazzle-painted vessels' movements were more easily distinguished, whilst with sun behind no particular difference was noticeable between the types."

"I am convinced that dazzle painting does not increase the difficulties as it is supposed to do, and so long as one has the masts to go by one ignores the hull in estimating the enemy's course. In certain lights dazzle painting may be most conspicuous in picking up a ship."

"E35 has several times carried out dummy attacks on convoys and single merchant ships in the Atlantic and in the Mediterranean. Most systems of dazzle painting appear to distort only parts of the ships, entirely failing to make the course deceptive.

"In a few instances where a simple type of gradual shading (from white at one end to black at the other) has been applied to the hulls and lower deck houses, etc., the dark end appears much bolder (through a periscope under normal light conditions) and consequently closer, the light end appears less prominent, and so farther away. Thus deception as to course may be arrived at."

The evidence of released British Merchant Marine prisoners taken captive by submarines was that dazzle painting did not appear to worry the submarine commander. More than one German submarine commander inquired what it was for. German submarine prisoners who were examined did not attach any importance to dazzle painting; but their evidence is, of course, open to suspicion. It is worthy of note that experiments with dazzle painting were made in Germany for the instruction of submarine crews, which would appear to indicate that the enemy attached some value to it.

The statistical evidence proved, unfortunately, unconvincing. Not only was the proportion of casualties among dazzle-painted and normal-painted ships so close that it was impossible to draw any conclusions of value from the small discrepancies that occurred in the tables, but so many



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STANDARD TRAMP STEAMER DAZZLE PAINTED.

considerations came into play that no definite significance could be attributed to these discrepancies. Month after month in great detail statistics of attacks on dazzle-painted and normal-painted British vessels, of the ratio of attack to the volume of traffic at sea and the proportion of ships sunk, were carefully collected and collated, figures being available from January 1918 to October 1918, on the eve of the signature of the armistice. The following summary is taken from the Report of the Committee on Dazzle Painting :

Trade.	I. No. Sailing.		II. Percentage of Sailings Attacked.		III. Percentage of Attacked hit (sunk or damaged).		IV. Percentage of hit Sunk.	
	Dazzle.	Normal.	Dazzle.	Normal.	Dazzle.	Normal.	Dazzle.	Normal.
Oversea								
Convoyed .	2,992	3,410	1·41	0·7	67	71	75	94
Oversea not								
Convoyed .	299	357	31·1	21·8	68	68	67	81
Cross Channel	6,407	8,053	0·61	0·88	54	68	71	87
Coasting .	4,973	11,292	0·82	0·77	44	44	72	89
Total January to June, 1918	14,671	23,112	1·47	1·12	60	60	70	86
Total January to October 1918	33,072	34,302	1·10	0·90	60	59	74	87

Incidentally, the one striking result brought out by these figures is the great security which was obtained from the system of convoy introduced somewhat late in the war. While the percentage of oversea vessels sailing free which were subject to attack was as high as 31·1 for dazzle-painted ships, and 21·8 for normal-painted ships, the percentage for ships under convoy fell as low as 1·41 and 0·7 respectively. It will be observed that, in the last four months of the period under discussion, the percentage of ships that foundered after being hit was somewhat greater, due probably to the longer experience obtained by enemy submarine commanders and to improved equipment, but the percentage of sailings attacked was less—a result that may be attributed to the development of the British convoy system.

It was pointed out by the committee that the cross-Channel traffic consisted to a considerable extent of troop

transports which were strongly escorted, while the coasting traffic included a large number of small vessels which did not run the same risks. These two together so far outnumbered the remainder as to affect the total to a large extent.

The figures of column II (excluding cross-Channel traffic) tend to show that dazzle-painted vessels were more liable to be attacked whether under convoy or not. The larger average size of dazzle-painted vessels, and the importance of the oversea trade in which they were engaged, made them more liable to be singled out for attack by enemy submarine commanders. This fact vitiates any conclusion that otherwise might be drawn from the comparison of the figures. When sailing under convoy with vessels of various nationalities, normally painted, the dazzle-painted ship was readily picked out by an enemy submarine commander as being British, and for that reason dazzle-painted ships were withdrawn from the Scandinavian convoys.

The more valuable statistics are contained in column III. It should be shown, if the claims for the confusional device were to be made good, that the percentage of sailings attacked in which hits were obtained was lower in the case of dazzle-painted vessels than in that of normal-painted vessels, the aim of the enemy commander being confused by the painting. In fact, for the six months the percentage is exactly the same, and for the full period is one per cent. more for the dazzle-painted vessels. Against this, again, has to be placed the fact that, as dazzle-painted vessels offered on the average larger targets, it might be suggested that a larger percentage would be hit.

In the same way, any conclusions to be drawn from column IV, showing the sinkings of vessels hit, are affected by size. Normal-painted ships sank in the proportion of 87 per cent. compared, in the case of dazzle-painted ships, with 74 per cent. But normal-painted ships, being on the average smaller, would more readily sink after explosion of a torpedo than the larger dazzle-painted ships, whose bulk would increase their chance of floating. On the other hand, the figures may to some extent be taken to show that the accuracy of aim of the submarine commander is affected by the dazzle painting. An analysis of the figures shows that 25 per cent. of the dazzle-painted ships attacked were

of 6,000 tons, whereas only 6 per cent. of the normal-painted ships were of this size.

The opinion was held by many naval officers that such advantages as dazzle painting gave were largely defeated by faults in the construction of mercantile vessels, which had been built without thought of war. For instance, the convention of raking masts and stacks was of the greatest assistance to a submarine commander, indicating at a glance the direction in which a ship was travelling. The use of two masts both in the centre line of the ship and widely spaced, also gave valuable assistance in deciding the course, and to defeat an enemy commander in taking his sightings the practice was adopted by several ships during the war of "staggering" the masts—re-stepping the foremast a few feet to starboard and the main-mast the same distance to port, or vice versa. Masts also were cut down to the cross-trees or topmasts housed, and a false crow's-nest introduced. The ship's bridge, offering in most cases a straight foreside with rectangular ends, was a point much used by submarines for judging inclination, and various modifications were devised.

As was to be expected, the adoption of dazzle painting by Great Britain excited considerable interest among the Allied maritime nations. The American navy dazzle painted the United States destroyers operating in European waters. The French Government, having sent naval officers to London for training in the system, instituted a dazzle-painting establishment similar to the one at Burlington House. The Italian Government also took up the scheme; a number of Russian ships were dazzle painted, and many American merchant ships. In this matter, Great Britain set the example for the world, the designs employed for foreign vessels being mostly those which had been evolved by the department in London. The adoption of dazzle painting by foreign nations came, however, too late in the war for any definite conclusions to be drawn from their experiences.

The end of the war left dazzle painting still in the experimental stage, with results too meagre for future guidance. From the many conflicting opinions expressed the following results emerge:

1. Dazzle painting has certain advantages for merchant ships, and no disadvantages save the very small extra cost.

2. Dazzle painting has certain advantages for warships operating alone, but is disadvantageous for others.

3. Its efficiency as a means of minimising successful submarine attack to an appreciable extent is not established by the evidence collected during the war.

But apart from these considerations, dazzle painting was undoubtedly favoured by officers and men of the Mercantile Marine, and contributed in some degree to support the morale of the service during the most critical phase of the submarine campaign.

CHAPTER IX

THE AUXILIARY PATROL

THE number of mines laid by the enemy in 1917 was about double that for 1916. Practically every important point on the coasts of the British Isles was mined, with the exception of the area between the Humber and Cromer, which was left clear, as the Admiralty concluded, in order to allow the Germans to carry out raids or even an invasion if conditions at any time favoured such an adventure.

In the early part of 1917, the enemy concentrated attention on the south and south-west of Ireland, but by the end of that year the Germans busied themselves in mining the principal convoy ports and certain convoy routes. The aim was, of course, to prevent food and other necessities coming into this country and to hinder the armies from obtaining their essential supplies. In the first part of the year, enemy submarines deposited their mines as soon as possible after reaching their operational area, generally laying them all in one batch. Later on they dropped them off headlands and other navigational marks with greater discretion, which was a return to their practice at the beginning of their submarine minelaying activity in the summer of 1915. The persistency of the enemy craft was most disconcerting to the British minesweeping organisation. As 1917 drew to its close, they made a practice of following the minesweeping vessels and laying mines in waters that had just been swept: and they followed this up by firing torpedoes at the sweepers with a view to disorganising our minesweeping efforts as thoroughly as possible. This development greatly increased the strain on the seamen engaged in this arduous duty at a time when the Auxiliary Patrol craft were required more and more for other purposes than minesweeping. The enemy realised that the Admiralty had

only a limited number of vessels which could be employed in anti-submarine work and minesweeping. The more vessels he caused us to use against submarines, the fewer could be employed for clearing the mines ; and vice versa. In either case, merchant shipping was exposed to attack.

The problem for the British naval authorities was thus no easy one. But by this time we had obtained greater experience in minesweeping and the training of the personnel had reached a higher level. Then, too, motor launches, with their shallow draught—less than half that of the trawlers—were being employed with good results for scouting for mines at low water. This innovation led to a gradual reduction in the loss of minesweeping vessels. As to the merchant ships themselves, their movements were being better controlled and in the latter half of the year they were being fitted with the otter, an instrument described in an earlier chapter, which cut the mine adrift and allowed the ship to pass through a minefield in safety. As a result of experimental work, improvements in minesweeping material were being made, and so, in spite of the great difficulties which were being experienced, the intensive campaign was kept in check.

The enemy's almost frenzied activity in the early months of 1917 naturally resulted in heavy demands coming in from the oversea areas for the greatest possible number of minesweeping vessels. Every suitable vessel that could be spared had to be pressed into the service. Ten small tugs, with exceptionally shallow draught and propellers working in tunnels, as in the London river fire-floats and certain of the Royal National Lifeboats, had been built by the War Office for Mesopotamia. These were, however, taken over for minesweeping and were known as the "Dance" class. In addition 30 small paddlers, 18 Scotch motor-drifters, and a large number of steam-drifters were commissioned. Orders were also given for the construction of 100 new twin-screw sloops and 300 Admiralty drifters, the idea being that these light craft would be able to relieve the heavy-draught trawlers, which in turn could then confine their efforts to hunting submarines. The building of these craft was necessarily a matter of time, since, owing to the demands of the army, workmen were scarce. But the Admiralty's resources had been steadily increasing. In January 1917 93 sloops,

gunboats, and paddlers, in addition to 130 trawlers, drifters, and motor launches were exclusively employed in mine-sweeping, a total of 523. By January 1918 this number had increased to 631, notwithstanding losses from mines and various causes.

From the beginning of the war to the opening of the unrestricted campaign in 1917, the greatest number of German moored mines destroyed by the British forces had been as follows, the statement being of special interest as showing the points of enemy concentration during the first phase of the war :

- (1) Grimsby Area, 838 mines.
- (2) Lowestoft Area, 674 mines.
- (3) Sheerness Area, 628 mines.
- (4) Dover Area, 511 mines.
- (5) Harwich Area, 318 mines.
- (6) South Shields Area, 169 mines (in addition to the mines of the Tyne minefield destroyed in August 1914).

The heaviest minelaying had occurred on the east coast of England, for the figures of Devonport, Portsmouth, and Queenstown areas were 37, 38, and 34 mines respectively. The increase of U-boat activity synchronised with an energetic policy of minelaying. During February 1917 mines were laid in such diverse spots as off Aberdeen, Flamborough Head, in the areas of Lowestoft, Harwich, Sheerness, and Dover, off Gravelines, Royal Sovereign Lightship, Milford Haven, off the Orkneys and Shetlands, off Rattray Head, May Island, at the mouth of the Tay, the Tees, in the neighbourhood of Sunderland, in the war channel between the Shipwash and Sunk, as well as off Queenstown, Havre, Dartmouth, and Folkestone. There was scarcely a part of the British coastline that was not mined at this period, with the result that ships of almost every class, destroyers, oil-tankers, trawlers, fishing vessels, tramp steamers, liners, and coasters were sunk.

But the enemy, for all his cleverness, was frequently stupid, or careless, or unfortunate, and several times German craft blew up on their own mines. During February, UC32 had been sent from Germany across the North Sea with orders to lay mines in the trade route east and south from the Tyne, sowing a field at the entrance to the Tyne, and off either entrance to Sunderland as well as at the entrance to Seaham, Hartlepool, and

Middlesbrough, and three widely separated points in the war channel between Middlesbrough and Flamborough Head. Early on the evening of February 23rd, just as she was about to begin her work off the entrance to Sunderland harbour, UC32 suddenly blew up whilst on the surface and sank on her own mines. Out of her complement of twenty-five, only the captain and two men were saved, being picked up by an examination vessel. On the following day the vessel was located by a diving party off the Roker Pier lighthouse, who recognised the submarine's gun and mounting, periscope, and conning-tower. The forehatch was found open. One of the torpedoes was salvaged with its warhead and pistol complete, and about fourteen mines were discovered still in the tubes.

Elsewhere the enemy was more fortunate, for on February 26th the armed trawler *St. Germain* was mined near Folkestone, but was towed safely into harbour, and on the same day, and near the same spot, the armed trawler *Seagull* was mined and sunk. The steamship *Swallow* was also mined, but she was brought into Folkestone by the trawler *Glenboyne*.

Even so the enemy found a good deal to discourage him. On the UC55 returning home in March, after laying eighteen mines off the Orkneys, her captain gave the German authorities a disquieting report of the activities of the British patrols off Kirkwall. "The promptness of the counter-measures taken immediately on sighting the submarine were," he remarked, "astounding. Within one and a half to two hours twelve destroyers, a submarine chaser, and two sweepers were on the spot." Another submarine commander—that of U57—recorded that "Trawlers are encountered all over the place, under the land and up to thirty miles from it."

The following extract from the modestly worded report of the commanding officer of the trawler *Chikara*, based on Granton and engaged in sweeping the Firth of Forth, shows the conditions under which such vessels were working at this time for the protection of shipping from the enemy's minelaying :

"I followed paddle steamers as directed until orders were received to complete the channel and area between May Island and mainland. The channel was swept west

and then east, the sweeps being at all times on the bottom, and upon reaching eastern limit the area between May Island and mainland was swept about 3.30 p.m., at which time sweeps were slipped close inshore between Crail and Fifeness. At this time the sea was very high from S.E., and being in shoal water and on a lee-shore, there was great danger of trawlers broaching-to before finishing the sweep, as the *Chikara* at one time submerged her port rail and 'pooped' a sea which filled her cabin. However, the sweep was completed and the chain sweep unshackled without accident. . . .

"At 4.30 p.m. received instructions to open fire on two mines on the surface two miles S. by E. from Pittenween. I regret to report that I was unable to secure a hit owing to the weather conditions and heavy seas, which constantly flooded the ship fore and aft. The unit stood by until dark and, disposed between May Island and three miles W. of it, warned incoming vessels. At daylight next day I proceeded to search for the mines, but owing to the low visibility and heavy snow squalls was not successful until 0.30 p.m., at which time mines were located two miles S.S.E. magnetic from Pittenween. The sea was too rough for the gun to be used, so I ordered rifle fire to be concentrated on the mines and exploded one . . . and sank the other. . . . The unit had swept all day on the third, and at 7.0 p.m. was in company with the *Northumbria*, when that vessel was destroyed, and at 7.15 p.m. the *Chikara's* boat in a heavy sea returned with a survivor on board."¹

On both sides the fortune of war varied from day to day. Early in March UC43, which had left Germany to lay mines off the south coast of Ireland, was sighted by our submarine G13, torpedoed and sunk without a single survivor. On the other hand, in two days a couple of sloops were sunk by mines while sweeping off that coast near Galley Head, and a little later a destroyer, which had done much good work from the commencement of the war, struck a mine off the French coast and sank. Mines, too, were found at the entrance of the Mersey. This was a serious matter, seeing that much British tonnage came in and out of Liverpool. On April 9th the steamship *New York*, with Admiral

¹ The trawler foundered on a mine on March 3rd near May Island, with the loss of one officer and eight men.

Sims, of the United States navy, on board, struck a mine off the Mersey Bar Lightship. As it was essential that the entrance to Liverpool's river should not be closed by the enemy, four paddlers were taken up and two swept channels were maintained with success.

From the beginning of the war up to January 1st, 1917, the number of German mines destroyed by the British naval forces was 2,828 ; but from the first of January 1917 to the middle of April 1917 1,215 had been sunk, the monthly average having risen from 98 to 350. Some conception of the risks faced by the officers and men in frustrating German plans may be formed, when it is stated that 486 vessels, including 170 minesweepers, were lost or damaged by mines between August 4th, 1914, and April 15th, 1917. Week by week the losses continued to mount up, but the nerve of the seamen remained unbroken. On April 6th, 1917, the trawler *Strathrannoch*, whilst sweeping off St. Abb's Head, struck a mine and was blown completely to pieces. Not a survivor was found, not even a spar—nothing except a life-belt. On April 20th the paddle minesweeper *Nepaulin* met a similar fate near Dyck Lightship. She was the second ship in the line when she hit a mine and disappeared. Three officers and fifteen men perished out of a total of forty-five, her commanding officer, Lieutenant R. J. Carruthers, R.N.V.R., having a miraeulous escape.

In order to avoid being torpedoed, our shipping had been compelled to hug the English coast, the idea being that vessels would always be within reach of the Auxiliary Patrol ships. Having realised that this preeautionary measure had been adopted, enemy submarines proceeded to lay their mines along the inshore traeks, as, for instance, between Eddystone and Bolt Tail, and on the Dartmouth-Berry Head-Exmouth-Sidmouth-Beer Head-Bridport-Portland Bill-Anvil Point-Needles route, plastering the sea off the headlands and fouling the inshore traek thoroughly. This strategy necessitated our sweeping and maintaining swept a channel one mile wide by means of trawlers and M.L.s. During the month of May, the Lyme Bay area came in for espeeial attention on the part of the enemy, and similar minelaying aetivity was manifested all round the British Isles, with the result that a heavy toll was taken of armed yachts, trawlers and merehant ships.

The coolness and daring of the British seamen were in no way affected by the surprises for which the Germans were responsible. On May 1st occurred a most gallant example of British tenacity. The small coasting steamship *Greenisland* had come down from the Clyde and when seven miles off Ailsa Craig sighted what was certainly a mine. Her master (Mr. S. Davison) was an ex-naval petty officer and a man of resource. He took his vessel close to the object, and when he realised that the mine was moored, he resolved to remove the danger. His ship was, of course, quite unfitted for minesweeping, and he would have fulfilled his rôle if he had been content to avoid the mine and report its location forthwith. But in the most unselfish spirit, he decided to do more than his bare duty. He rigged up an improvised sweep, made out of a spar weighted with firebars. He towed this and manœuvred in such a manner that the spar actually struck the mine several times, though the horns were not broken. His next move was to send off a small boat with a wire by which the mine was encircled, and then he shackled the wire to his own craft. The *Greenisland* steamed ahead so as to tauten the noose, and veered the wire to 100 fathoms. By this means she succeeded in dragging the mine and its mooring. He towed them inshore clear of traffic and actually lay to them all night as if to an anchor! Next day patrol vessels arrived and took charge of the mine. For this fine work, which possibly saved one vessel from being destroyed, the master, who received the D.S.C., and the crew were suitably rewarded.

Not merely off England, Scotland, and Ireland, but off the coasts of France, even down the Bay of Biscay off Belle Isle and Ile de Ré, were mines being laid. One of the officers of UC26, Sub-Lieutenant of Reserve Heinrich Petersen, who was second-in-command, kept a faithful diary of his experience early in May when engaged in mining off Havre and Cherbourg. The following extracts reveal the growing dislike of the Germans for the tasks assigned to them:

“May 2nd, 12.4 a.m.—Steered for Havre and laid mines just outside the buoys. I slept during this, but it was a painful process. We nearly got caught in a net. . . .

“May 4th . . . 1–1.35 a.m.—Dived to attack two

steamers escorted by a destroyer ; but of course we never got a shot in.

“ May 6th . . . 8.12.—My opposite number (the second watch-keeping officer) is fed up. . . .

“ May 7th . . . 2 p.m.—Came to surface and again headed for Barfleur. It is a miserable existence. . . .

“ 9 p.m.—Sighted a convoy, which of course we do not bag. Vessels turn away.”

That was the last entry this officer made in his diary, for within four hours, just as the submarine was about to dive, the destroyer MILNE came across her and rammed her conning-tower at full speed. The UC26 sank immediately. Depth charges were dropped to make sure of her destruction. Only two survivors came to the surface. UC77 narrowly escaped a like fate. Just before the end of May she left Germany for Aberdeen with orders to bombard that port, but as she was cleared for action on arrival, a British destroyer arrived on the spot, so she dived and made off, contenting herself with laying mines off the Firth of Forth and sinking three ships.

As the summer went on, the concentration of the UC minelayers in certain areas became most marked. Previously they had systematically mined traffic routes and approaches to harbours between the Farne Islands and the Thames : but now for some time they confined their attentions to certain areas only. During July, for instance, they concentrated especially on the areas of Lowestoft, the Shetlands, and the S.W. coast of Ireland. In one month alone the Queenstown minesweepers destroyed as many as 129 mines. But the enemy could not maintain the pace of minelaying with which he had inaugurated his new campaign. By July the number of mines laid had begun to decrease, although they were still very numerous, and the cost in British minesweepers and merchant ships continued to be deplorably high.

About this time the hydrophone was found to be useful for quite another purpose than that for which it had been designed. By its means Auxiliary Patrol vessels were often able to hear submarines dropping their mines. One night in July off the Needles, a motor launch picked up a submarine on her hydrophone, and reported the fact to the authorities. Next morning three pairs of drifters were sent

to the spot and they swept in the neighbourhood where the sounds had been heard, discovering six mines. The counter-offensive was being developed with increasing success as additional minesweeping craft were pressed into service, even motor lifeboats being utilised in the emergency, and occasionally enemy craft "committed suicide." One instance of this has already been mentioned. On the third anniversary of the British declaration of war another vessel was blown up by a German mine. UC44, a minelayer, was off Waterford about half-past ten at night, when she struck a mine and sank like a stone. She had already laid eight mines, subsequently found by our sweepers, but divers who were sent down to the wreck reported that some mines were still on board when she blew up. It appeared that her captain was unaware that mines had recently been laid in that locality.

During the later part of 1917, enemy submarines made strenuous minelaying attacks on the channel used by the Anglo-Dutch traffic. In the same way they did their best to render dangerous the North Channel (round the north coast of Ireland), where many liners were passing with men and munitions from the United States. Such ports as Lerwick and Kirkwall, where convoys were sure to be moving in and out, received particular attention. Consequently if a ship, after hitting a minefield, managed with difficulty to get near an adjacent harbour, she would find the entrance mined. But the Auxiliary Patrol were leaving no efforts untried to make the passage of the merchant ships as safe as possible. For instance, in the Harwich area during the seven months ending September 30th, 1917, the minesweepers destroyed 500 mines with the loss, it is true, of three minesweeping trawlers, one paddler, and one drifter; but without the loss of a single merchant ship.

The next variation in the enemy's strategy was to lay his mines as far apart as possible with the object of increasing the work for the sweepers. The efficacy of his mines had been much enhanced since the beginning of the war, and they proved themselves to be deadly weapons when detonated. The results were frequently of the most distressing character. In the early hours of November 28th, the examination vessel off the Mersey Bar unfortunately struck a mine, blew up, and no fewer

than twenty-eight valuable pilots thus lost their lives, and the merchant service was robbed of a group of men whose knowledge and experience were invaluable.

Towards the end of December the enemy inaugurated a new departure in minelaying, for he now began to place his fields right out to sea where it was impossible to get any navigational fix, assuming that no mine-sweeping flotillas would venture so far from any base. Thus one submarine was discovered in the North Sea about forty miles out from Peterhead, having laid thirty-three mines in an irregular line probably with the intention of catching a convoy. On December 28th the 3rd Fleet Sweeping Flotilla, out from Granton, while making an exploratory sweep, dealt with another minefield to seaward of Stonehaven, where thirty mines had been laid in five groups. Thus the enemy was at this period laying his mines both close to the land and well out of sight of the shore. He was exhibiting cunning and daring in his efforts to starve out the people of the British Isles, who depended on food from overseas, and to prevent supplies reaching France. By such means the German seamen were, of course, rendering the greatest assistance to their armies on the Western Front. But the British naval authorities were also taking a long view of the war and doing everything to counteract these enemy measures. The passage of supplies was being protected by means of convoys, and the safe passage through the Narrow Seas was being ensured by minesweepers and patrol craft.

It would convey too limited a conception of the extent of the enemy's operations if no reference were made to his activities away to the north in the White Sea, and to the south in the warmer latitudes of the Mediterranean and Otranto Straits.

In January 1917 Vice-Admiral Sir Martyn Jerram was sent to the White Sea in the *Kildonan Castle*, and on reaching Archangel inquired into the whole question of taking measures to protect merchant vessels in North Russian waters. As a result of this visit it was agreed that the British and Russians should work in separate areas. The British were to buoy and sweep the channel from Cherni to Sosnovetz Island, to maintain the boom at Yukanski, and to control the traffic there. The Russians were to supply six or nine minesweepers to work under

the British minesweeping officer, and were also to be responsible for the sweeping from Sosnovetz to Archangel as well as the White Sea. The British Admiralty agreed to add six trawlers, four drifters, and one armed yacht to the existing British patrol, thus increasing the British contribution to the defence of Russian waters to four armed boarding steamers, twenty-three trawlers, four drifters, two yachts, in addition to the battleship *GLORY* and the cruisers *VINDICTIVE*, *IPHIGENIA*, and *INTREPID* already in the White Sea. Orders were also issued for a number of buoys, bringing the total to fifty, to be sent out in the spring.

The contribution, therefore, of British ships and men towards solving the difficulties in these waters, at a time when not a single ship or crew could be really spared, was anything but negligible. The impending shortage of food in the British Isles was the dominating factor, and it was essential that all the grain Russia could supply should be given safe conduct. As soon, therefore, as the ice permitted, minesweeping was continued whenever the weather made it possible, and a constant patrol was maintained by the British forces. On April 9th, 1917, a small Russian collier struck a mine in the entrance of Kola Inlet and four mines were found in the western side of the entrance; thus additional evidence was furnished that the Germans were not neglecting northern waters. During April other mines were found and destroyed off the north-east corner of the Ribachi Peninsula, the trawler *Arctic Prince* striking one with the loss of six of her crew. She got safely into Kola Inlet, and was subsequently towed back to England. No other mines were found during this year. During the months of June, July, and August all shipping for Archangel came by the outer sea route to Yukanski, where the vessels were assembled in convoys and swept through to Archangel every forty-eight hours. During September and October all shipping from the United Kingdom proceeded by the Norwegian Inner Leads. They were then met by escorts of trawlers at Vardo or Kirkness every forty-eight hours and finally escorted and swept the whole way to Archangel Bar. The distance of about 450 miles each way represented most arduous work for the yachts and trawlers employed. At least a thousand ships were safely escorted to Archangel during the year.

In April, activity in the White Sea was redoubled, with the arrival of twelve British trawlers, which were followed a month later by five trawlers, four drifters, and two armed yachts. Early in that month a large German U-boat minelayer had laid the mines just mentioned off Kola Inlet and the Ribachi Peninsula. Two of these fields were swept up by our trawlers, though a field north-west of Ribachi Peninsula was not discovered until September 1918. These proved to be the last German mines laid in those northern waters during the war, though enemy submarines operated with gun and torpedo most of the year, especially off North Cape and the approach to Kola Inlet.

At this period, the whole naval situation, already rendered embarrassing by the difficulty of securing the co-operation of the Russian naval authorities, underwent a change unfavourable to the Allies owing to the political troubles in Russia itself, which were coming to a head in the early months of 1917. In March the Tsar had abdicated, but it was not until the following November that the Bolsheviks obtained control of the administration. Consequently, during most of that year the British forces were still engaged, with scant assistance from our ally, in maintaining free communication with Archangel and Murmansk, as well as in patrolling, escorting and minesweeping duties. In April eight Russian trawlers, and by July a further sixteen, had been added to the force; but by this time demoralisation had set in, following hard on the break-up of the Imperial regime. On September 3rd the Germans entered Riga and then history was made rapidly. For on November 7th the Bolsheviks defeated the Kerensky adherents, and exactly one month later Lenin, Trotsky, and Tchicherin concluded an armistice with Germany. In the meantime U46, which had been operating in the Arctic during the previous year, had left Germany for the same area and resumed her operations, sinking the ships *Obj* and *Ilderton* on October 24th and the *Baron Balfour* four days later.

In the Otranto Straits the Auxiliary Patrol was still hard at work in its endeavour to deny the passage to German and Austrian submarines making their way to and from Cattaro. In the first week of February 1917, eight steel drifters reached the Adriatic from England.

The worm was eating into the wooden drifters in those waters, and some vessels had become seriously unseaworthy for that reason. The situation in this area may be briefly summed up. There existed fourteen divisions, of about seven drifters each, and a line was formed across the Otranto Straits daily from three in the afternoon until daylight. Every day at daylight one division left the line for Taranto, and one left Taranto at 3 p.m. on the same duty. In Home Waters usually a vessel began her patrol almost as soon as she was outside the harbour of her base, but in the south the drifters had to steam for about twenty-four hours before reaching their area. Besides the drifters, M.L.s (motor launches) had arrived from England. These were based on Gallipoli (Italy), and, weather permitting, left at dawn every day to patrol the coast from Trieste to Otranto. More drifters continued to arrive from England by sea and more M.L.s by steamship with a view to strengthening the defensive measures as speedily as possible. Some of the M.L.s were sent on from Taranto under their own power to Malta and Mudros. In the meantime, fifteen wooden drifters had reached Poole from the Mediterranean with their bottom planking very badly holed with worm. The menace of the mine in Italian waters had become serious, and early in 1917 the sweeping of the coastal tracks on the west coast of Italy and Sicily began. By February, 135 mines had been accounted for. German submarines, based in the Adriatic, continued to lay mines off the headlands and in the straits of Bonifacio and Messina, in accordance with the practice adopted in British Home Waters.

From the beginning of April, the Otranto drifters, instead of netting the straits on a fixed line, began to operate in a given belt stretching from the Italian coast to Fano Island. In this belt the drifters worked in such a manner that the enemy could never be sure exactly where the lines of nets were. M.L.s were allowed to remain at sea by night, painted with white diagonal stripes to prevent their being taken for submarines, and they patrolled about five miles south of the drifter line thereby, as it was hoped, causing the homecoming submarines to dive into the nets. At the western end, close by the Italian shore, nets were placed and patrolled at night by M.L.s.

The problem of the Adriatic was practically identical with that of the Dover Straits. In spite of all counter-efforts the enemy submarines were succeeding in getting through both of these straits. Neither the Dover nor the Adriatic barrage was proving more than a nuisance to the enemy, although now and again submarines had been caught. For various reasons, too, the anti-submarine policy in the Mediterranean had been rather defensive than offensive, and it was realised that some more active steps were necessary. The naval authorities had relied for the safety of our merchant shipping on certain fixed trade routes marked by patrol vessels, which, in effect, gave the enemy much the same assistance as signposts do to traffic along a road. The success of the net-drifters depended on the presence of plenty of craft to oblige the submarine to dive without sighting the drifters, and so run into the nets. Owing, however, to the intensity and extent of our naval warfare, it was not possible to supply more of these craft to the Otranto area. Then, again, in bad weather the nets were either lost or had to be hauled aboard, and the commanding officers of enemy submarines were not slow to choose these favourable occasions for negotiating the straits. The Italian Naval Chief of Staff, Admiral Thaon di Revel, had no faith in the drifter-net idea, and with his colleagues favoured a big, continuous net extending across the straits from Santa Maria di Leuca to Fano Island. The Italians were anxious that the British Government should supply all the material, with the exception of the mines to be attached to the nets. These mines the French were to be asked to supply. This form of net was now decided upon, and at a conference held at Corfu from April 28th to May 1st, when representatives of the navies of Britain, France, Italy, and Japan attended, it was agreed *inter alia* that night navigation should be largely employed for Mediterranean merchant traffic, that a number of harbours should be furnished with protecting nets as harbours of refuge, and that vessels on the high seas routes should be in escorted convoys. It was some months, of course, before effect could be given to the new plans. Meanwhile, the conditions favoured the enemy.

It must be borne in mind that this was the time when the submarine menace was at its height and that the

sinkings of merchantmen in the Mediterranean were being carried out by submarines whose base was in the Adriatic. Moreover, it was realised that to close the Otranto Straits effectually was at least very much more difficult than to deny the Dover Straits to the enemy. The former are forty-four miles wide, and are very deep, while the drifter base, as has been stated, was twenty-four hours away.

On May 15th the Austrians made a cruiser raid on the drifter line. At 3 a.m. (Central European time), an hour before daylight, two four-funnelled Austrian cruisers suddenly crossed the drifter line from north to south. Seven divisions, each consisting of seven drifters, lay, with nets out, across the southern end of the Straits offering an easy target for attack. Having surveyed the trend and extent of the line the cruisers began their operations about 4 a.m. One attacked from the western end of the line, a second from the eastern end, and it is believed that a third attacked at the centre of the line. There was no occasion for haste and the cruisers stopped their engines, to fire, even taking prisoners at the eastern end from the drifters. About 4.45 a.m. the raiders ceased firing and returned to Cattaro. In a contest between small drifters, each with one tiny gun, and fast cruisers, armed with much superior batteries, the odds were of course ludicrously unequal. That did not deter the British fishermen from fighting. Several of the drifters, in the most gallant manner, engaged the big cruisers, and what is more, obtained some hits. In spite of this gallantry, no fewer than fourteen drifters were sunk and the losses of personnel were heavy, eight officers being taken prisoners to Austria. A couple of M.L.s were on patrol three miles south of the drifter line, but they were not attacked and were of assistance subsequently in communicating with passing vessels as well as in taking wounded to Gallipoli. On their way home the cruisers were engaged by our light cruisers DARTMOUTH and BRISTOL, but at noon the action was broken off, and two hours later the DARTMOUTH was torpedoed by a submarine. She managed, fortunately, to get into port.

The result of this raid was that the drifter line was now shifted a little farther south, and was maintained only during the hours of daylight. Every night the drifters sheltered in Castro, Tricase, Fano, or Merlera.

Only in later months, as a temporary measure due to a submarine alarm, did the drifters ever ride to their nets again across the straits at night, and on these occasions the line was protected by Italian destroyers. By the end of July orders were issued that drifters were to remain in harbour except when netting the straits, and arrangements were made that warship protection should then be afforded them. The M.L.s, however, went to sea daily so as to be on their patrol line by dark, returning to Tricase at dawn. They operated with engines stopped, listening with their hydrophones.

With the abolition of the drifter-net barrage and the increased importance which was attached to hydrophone work, an entirely new situation was created in the Otranto Straits. By the middle of October a division of Australian destroyers had arrived and took turns with four French destroyers on patrol work, but in the meantime the new Franco-Italian fixed net barrage had been begun, the drifters being employed in laying the first unit during this month. Supported by buoys, and sixty metres deep with mines attached, the first unit was *in situ* by November 10th. The strategy in the straits underwent, as a consequence, a change. First of all there was the fixed barrage of mine-nets, stretching east and west. Then, there were the trawlers and drifters and M.L.s as a mobile barrage when required. Destroyers, and sometimes even light cruisers, were utilised as a protective screen, while, for observation purposes, there were aeroplanes and kite-balloons. Before the end of November some trawlers, drifters, and M.L.s had joined the British Adriatic force from the Ægean. By the end of the year the Franco-Italian net barrage was making good progress. Large consignments of hydrophone stores were now arriving in Italy and Auxiliary Patrol craft were being sent for a time to Malta for hydrophone instruction, so that confidence grew with the improving conditions. As in the case of the Dover Straits, experience had evolved entirely new methods for countering the submarine.

The position in the Otranto Straits has been examined at some length, inasmuch as these narrow waters were the key to the whole submarine situation in the Mediterranean. If the door of the Adriatic could have been closed, the submarine problem in the Middle Sea would

have been solved. This was the weakest link in the defensive chain, and for that reason merchant ships continued to be lost in large numbers in these waters. The problem was so novel in its series of difficulties, that it is small wonder that it remained so long insoluble, and it was complicated by the factors which, though often ignored by people on land, demanded consideration on the part of the British naval authorities. Many of the men in the auxiliary craft had been serving abroad for a long period—cut off from their homes for months on end for the first time in their lives. During the early part of 1917, the Admiralty decided to send to Home Waters twenty-four skippers and 177 ratings, relieving them by fresh drafts sent from England. This scheme of relief had to be accepted, though there was no slackening in the pressure exerted by the enemy. Mines were still being discovered in many places and submarines continued active. On May 4th the trawler *Lord Salisbury* foundered on a mine near Eros Island, Salonica, and mines were also found near Mudros, Candia, and off Malta, a big fleet of over fifty trawlers being based on that island.

At the beginning of August moored mines were destroyed in the approaches to Alexandria, and in the following month other mines were swept up in the Gulf of Salonica. Evidence of the enemy's activities was also accumulating almost every day. On September 8th the armed yacht *Narcissus II* was in action with U49, and apparently damaged her so much that the submarine was compelled three days later to put in to Cadiz. Here she was interned by the Spanish authorities. Her commanding officer gave his word of honour in writing not to attempt to escape. However, on October 6th, at 5.45 p.m., he took his submarine to sea and managed to get to Cattaro. His action as an officer proved no disservice to the Allies, for it was regarded in Spain as an insult to that nation's navy.

During October the Malta sweepers discovered seven more mines, and, owing to the vigilance of other auxiliary craft, mines were again found off Salonica and Egypt. As in the northern waters so in the Mediterranean, drifters were needed here, there, and everywhere, for all sorts of purposes. In November, during the bombardment of Gaza, Palestine, by our monitors, torpedo-boats, and a French battleship, it became necessary to protect the

bombarding ships by nets. These nets were towed by British drifters, under Lieutenant C. Brand, R.N.R., and rendered most efficient service, since enemy submarines were then operating off the coast of Palestine. These drifters, as well as some trawlers, were also usefully employed in working off the same coast, while transports were discharging cargoes of ammunition and food for the British army. They escorted ships between Port Said and Palestine, and just before General Allenby's big advance were joined by fourteen more drifters from Taranto. Even after the armistice these craft continued carrying mails, cargoes, and troops up and down the coast, besides maintaining a regular ferry service between Haifa, Beyrout, Tripoli, Alexandretta, and Mersina. They were the handmaids not merely of the navy, but also of the army.

How were matters developing in the meantime in British waters? The concentrated efforts, with the new material which had become available, to deny the enemy use of the Dover Straits, which had been begun before the end of 1917, continued during the final year of hostilities with great success. From January onwards, powerful flares were burnt from surface craft nightly, and so made visible the passage of submarines on the surface. The enemy was then hunted by the patrols, and, if he dived, crashed into the mines awaiting him under water. These cross-channel minefields were still being laid, and in a similar manner the enemy's tracks near the Belgian coast were being made more and more difficult for him.

In the North Sea, owing to the surface attacks on the Scandinavian convoys and the excessive strain on personnel and material, drastic modifications had to be made in the convoy organisation. The new measures enabled a continuous stream of convoys to be maintained to and from Norway. Between January and November 1917 over 2,000 ships were convoyed from Methil to Norway, and a similar number from Norway to the Humber, with the loss of only five ships from submarines operating from under-water, while none suffered from surface attack. Trawlers played no inconsiderable part in keeping open this essential base of communications. The Scandinavian countries were dependent on the British coal supplies. In exchange for coal we were able to import from Scandinavia iron ore, sulphur, pyrites, nitrates, spelter, aluminium,

timber for making army huts, pit props for coal mines, paper pulp, herrings and so on. In order to prevent a recurrence of surface raids, supporting forces, consisting of battleships and light cruiser squadrons, were regularly maintained from January 1918.

Farther south the Dover drifters continued to maintain the fine traditions which they had already established, and did not flinch in face of circumstances which might well have broken their spirit. In the forenoon of January 23rd, 1918, for instance, the drifter *Clover Bank* (Lieutenant D. T. Webster, R.N.R.), senior ship of the net drifters, while examining the nets off the Belgian coast, was suddenly attacked at short range by a division of enemy destroyers. This drifter was the second of that name, and had been built in the previous year, her namesake having been sunk in action off Zeebrugge on April 24th, 1916. Shells began to fall alongside, so the drifter's crew were sent to action stations and a duel opened. The oncoming destroyers increased the rapidity of their fire, but it was ineffective, though everything favoured the Germans. At 4,000 yards the *Clover Bank's* third shot was a hit. Then she ignited and dropped overboard a smoke box to screen herself. When the smoke had cleared, it was found that the destroyers were on either side of the drifter's quarters, two being astern. Thinking that his drifter might be boarded or captured, Lieutenant Webster ordered the engineer to be ready to open the sea-cocks. The confidential books were forthwith thrown overboard. In the meantime the enemy was coming up fast, and now only a mile and a half away was not only firing shells, but using machine guns as well. Just as the end of the *Clover Bank* seemed to be certain, two British destroyers were sighted three miles away racing up from the westward at full speed, followed by the rest of the patrol like a pack of hounds. This saved the situation, and the enemy altered course and made off to seek the protection of his land batteries. Lieutenant Webster and his ship's company received an expression of the Admiralty's appreciation for their action.

How well the new Dover barrage of mines was acting was exemplified by an incident which occurred before this month was ended. At 8 a.m. on January 26th, at the eastern end of the English Channel, the drifter *Beryl III* was closing Gris Nez fog signal when she sighted an enemy

submarine ahead and stationary. The *Beryl* opened fire, her second shot hitting the base of the enemy's conning-tower forward. The submarine hastily dived, a double explosion followed, and thus U109, having struck one of the Dover mines, ended her career. Skipper J. H. Bullock, R.N.R., of the *Beryl*, was awarded some time later a D.S.C. The crew were at the same time awarded the sum of £1,000, but they asked that £500 should be paid to the Mayor of Dover's Fund, earmarked for the widows and children of the drifters' crews who had lost their lives in the raid by German destroyers during the night of February 14th-15th, in circumstances which will be related in due course.

Two days after the sinking of U109, thanks to the combined use of hydrophone and depth charges, UB63 was destroyed off May Island by two of the Granton armed trawlers. The German submarine crews were liking the life at sea less and less in the conditions created by the new measures of the naval authorities. No longer were they volunteers; no longer were they tempted to the service by the possibility of quickly earned glory. How exhausting and nerve-wracking life had become for them was revealed by the log of a certain German submarine which started out from Heligoland at 5 a.m. on the last day of January. Owing to the number of British mines which had been laid in the Heligoland Bight, she had to be escorted by a minesweeping division. About four o'clock the next morning, these minesweepers encountered one of the British mine barrages, so that the submarine's commander, realising that he could get no farther, first anchored and then went back to Heligoland. On February 3rd the submarine was compelled to give up all hopes of penetrating the Bight, and made the voyage via the Elbe, Kiel Canal, and Kattegat, with the result that she did not arrive off Hartlepool, her destination, until February 12th. She then made two unsuccessful attacks on shipping, but on the following day had to start for home as she had consumed so much fuel. But this submarine was fortunate in comparison with the UB38. On February 8th the drifter *Gowan II*, while patrolling off Dover about half-past nine at night, saw a submarine in the beam of a trawler's flare. She steamed full speed towards her and the enemy disappeared. A quarter of an hour later a

heavy triple explosion beneath the surface indicated that the UB38 had met her fate in the barrage. The sum of £1,000 was awarded to the officers and men of the Dover Patrol, who handed it over to the Mayor of Dover's Fund.

We must now turn to a dramatic raid of the German destroyers against our vessels of the Dover Patrol, which took place on the night of February 14th-15th, and caused us heavy losses. It was a tribute, though the fact was not recognised at once, to the efficiency of the Dover Patrol. Since the middle of December, five German submarines had been sunk in the Dover area, and several had had very narrow escapes. The enemy's object was to destroy the "light barrier," as they called the British flares, whose effect was, as they have admitted, to make the straits "actually almost impassable." Two half-flotillas of destroyers were employed in the raid. The weather was fine but overcast; the moon had set, and the sea was calm when the attack took place.

In order to realise the position, it is necessary to remember that a series of buoys, numbered 2 to 16, existed between Folkestone and Gris Nez to assist the patrols in maintaining their positions. About two and a half miles on either side of this line were stationed trawlers, paddlers, and other small craft, either to burn flares or use searchlights. In addition, fifty-eight drifters were on this line patrolling so as to deal with any submarine between Folkestone and Gris Nez. They worked in divisions, usually of seven, under a Lieutenant R.N.R., or R.N.V.R. The whole area of the submerged minefield was thus illuminated when the attack took place.

The raid consisted of two assaults on the north-west and on the south-east. At 12.40 a.m. one half-flotilla of four destroyers started the north-west attack by shelling the paddler *Newbury*, whose revolving searchlight made her an easy target. The destroyers then proceeded slowly down the drifter line and sank the drifters *W. Elliot* and *Veracity*. The paddler *Lingfield* and an M.L. also came under fire, but some drifters managed to make their escape. The enemy then disappeared. The incident had taken about half an hour, by which time the *Newbury* had become a disabled hulk, with most of her ship's company killed or wounded. The *Veracity* received the enemy's first shell through her boiler, and the second forward of the wheel-

house, but the skipper continued to steer her until she was sinking, when all the crew got away in the drifter's boat. In the *W. Elliot* only the skipper, the cook, and one hand were saved.

The south-east attack was made by three destroyers and began about 12.45 a.m. near the Gris Nez end of the barrage. The trawler *James Pond* was soon on fire. The crew endeavoured to extinguish the flames and beach her, pluckily refusing the offer of a French torpedo boat to be taken off. But finally the vessel had to be abandoned. Proceeding along the line, the enemy shelled the drifter *Clover Bank*, which took fire, and afterwards sank, only one deckhand surviving. Still coming along the line towards the English coast, the destroyers sank the drifters *Cosmos* and *Jeannie Murray*. These three craft were all "flagships" and unhappily only four survivors escaped from them. The next to be shelled were the drifters *Golden Gain*, *Golden Rule*, *Treasure*, and *Violet May*, which were all damaged. The last-named vessel was brought into port next day by two engine-room ratings, who were the only unwounded men left in her. For some reason the enemy missed one division of drifters, but they also sank the *Christina Craig* with all on board. About 1.30 a.m. the Germans turned back when about half-way across the Channel and on the return journey met and sank the drifter *Silver Queen*, which had taken off the survivors of the *Cosmos*. Finally, after firing on two more drifters, these destroyers also made off.

This raid cost the Auxiliary Patrol heavy losses of men and ships. There were sunk one armed trawler and seven drifters. One paddler and six drifters were damaged. Twenty-two men were killed, fifty-four drowned, and thirteen wounded. Many of these officers and ratings had done fine service off the Belgian coast and in the Dover Straits, and their death was a grievous blow to the patrol service. If anything was wanting to rouse the fishermen's anger against the Germans, it was this raid by the enemy in overwhelming force; but the seamen realised that the Straits of Dover and Otranto, guarded by drifters, were two of the keys in the submarine struggle, and that the infliction of even heavy casualties was merely an incident in the hard-fought game.

The raid in no way lowered the efficiency of the watch

and ward. On the other hand, the decline in the morale of the crews of the German submarines continued. The Germans were suffering from a shortage of trained engineer officers and experienced petty officers, and the hands were young and inexperienced. Recent losses in submarines had made the crews so nervous that they were often only too pleased to be taken prisoners, very willing to escape further cruising in U-boats. No longer could a captain pick his crew ; he had to go to sea with whatever men were drafted to his boat. As for the experienced hands, some of them had completely lost their nerve, and the others were so scarce that they were treated with a consideration which had been unknown before, and escaped the severe punishment for offences which was meted out to the raw hands.

The submarine service had become thoroughly unpopular, and the officers and men of the High Seas Fleet, by reason of the high pay and good food of these " heroes of the nation," regarded it with jealousy. Little was said in Germany of the rising toll of losses which the submarines were suffering, but week by week they continued. The flares had been found so effective that a thousand a day were being manufactured. On March 10th, UB58 was destroyed in the Dover minefield as the result of having been compelled to dive by an Auxiliary Patrol vessel which had fired on her. There were no survivors. On April 11th, owing to the vigilance of the Dover trawlers and drifters, UB33 fouled a mine in the barrage, and was blown up. Some weeks later diving operations took place, and a steel box, containing her signal books and codes, was recovered. In other areas the struggle was also being well maintained. On April 17th, off Torr Head (north of Ireland), the drifters once again showed that they could fight a submarine of superior armament but inferior spirit. About half-past five in the afternoon the drifter *Pilot Me* sighted a periscope, and she dropped depth charges whilst zigzagging over the course the enemy appeared to be steering. She then stopped and used her hydrophone. Presently UB82 came to the surface between *Pilot Me* and another drifter, the *Young Fred*, at an angle of 45 degrees. All the drifters on the scene then opened fire at short range, and the *Young Fred* proceeded to drop a couple of depth charges right on top of the enemy. This caused so terrific an

explosion and such a high column of water that the other drifters believed for a moment that the *Young Fred* was gone. The sea became covered with German wreckage, such as woodwork fittings, gratings, and seamen's caps bearing the words "Untersceboots Flotilla." In consequence of the prompt action of the *Pilot Me*, the submarine had been so damaged by the first depth charge that she broke surface, and remained exposed at a very steep angle until the *Young Fred* finally dispatched her. The Admiralty considered this "a very creditable and successful operation." A number of D.S.C.s and D.S.M.s were distributed, and the sum of £1,000 was awarded to those who had brought about this happy result.

A few days later, on April 22nd, owing especially to the persistence of seven drifters and a trawler—all of whom shared in an award of £1,000—UB55 was destroyed in the Dover area. Three live Germans, as well as one dead body, were picked up by one drifter, and three more survivors by another drifter. They had been through the worst of agonies. The rate at which the enemy submarines were being sunk in the Dover area was a proof that vigilance of the patrols and lack of skill on the part of the submarine officers were, in combination, defeating the enemy's plans.

And now we come to one of the brightest pages in this country's naval history—the blocking of Zeebrugge and the attempted blocking of Ostend on the night of April 22nd–23rd, in order to check the activities of the torpedo and submarine craft based on those ports. The force to which this mission was assigned was drawn from the Grand Fleet, the Harwich Force, the Dover Patrol, the Naval Depots, and the Royal Marines, but, so far as our purpose is concerned, interest lies expressly with the part played on this memorable occasion by the men of the Dover Patrol—the merchant seamen, fishermen, and yachtsmen.

An unsuccessful start was made on April 11th, and a second on April 13th, but on April 22nd weather and other conditions permitted the whole force to get across to the Belgian coast. The preparation and training for the attack had extended over a long period, and the concentration of the force had to be made within sixty-three miles from Zeebrugge; but nevertheless secrecy was preserved. The force consisted of 82 officers and 1,698 men; the ships

comprised 9 monitors, 8 light cruisers, 7 flotilla leaders, 44 destroyers and torpedo boats, 61 motor launches, 24 coastal motor boats, one picket boat, 2 parent ships, 5 blockships, 2 submarines, one minesweeper, and 3 boarding vessels. After a long search in many ports, the Mersey ferry steamers *Iris* and *Daffodil* had been selected for the purpose of forcing H.M.S. VINDICTIVE, with her storming party, alongside the mole, and bringing away all the landing parties in case the VINDICTIVE was sunk. Admiral Keyes, who was in command of the operations, realised that an effective smoke screen was necessary, and this important duty was entrusted to the M.L.s and coastal motor boats. To the VINDICTIVE, *Iris*, and *Daffodil* were confided the attack on the mole; the THETIS, INTREPID, and IPHIGENIA were to block Zeebrugge-Bruges canal; the SIRIUS and BRILLIANT were to close the exit from Ostend; submarines were to damage the viaduct connecting the Zeebrugge mole with the shore; and monitors were to bombard the enemy ashore. The hazardous duty of rescuing the officers and men of the blockships was to be carried out by M.L.s.

Thus at 4.53 p.m. on April 22nd, the eve of St. George's Day, the main force left a point to the north of the Goodwins, and at 11.20 p.m. the bombardment of Zeebrugge and Ostend began. At 11.40 p.m. the M.L.s and C.M.B.s (coastal motor boats) laid their smoke screen, and one minute after midnight, the VINDICTIVE, followed by the *Iris* and *Daffodil*, went alongside the mole and the storming and demolition parties got to work. At 12.15 a.m. the submarine C3 had been wedged, with great skill, under the viaduct, and was blown up. Ten minutes later the blockship THETIS passed the mole, and was sunk at the entrance of the canal. She was followed by the INTREPID and IPHIGENIA. This blocking was, of course, the principal object of the operation, and all the rest that happened was by way of diversion of the enemy, in order to make the blocking of the canal possible.

On either quarter of the IPHIGENIA followed M.L.282 (Lieutenant P. T. Dean, R.N.V.R.) and M.L. 526 (Lieutenant H. A. Littleton, R.N.V.R.). The latter picked up the men from the THETIS and INTREPID, who had launched their boats, and Lieutenant Littleton then took his M.L. out to sea. Lieutenant Dean, under heavy gunfire, then

picked up some of the crew of the *INTREPID* and *IPHIGENIA*, who were accommodated aboard his M.L. 282. The exploit of Lieutenant Dean, for which he was afterwards awarded the Victoria Cross, was one of the outstanding features of this daring raid. The motor launches were built only of light thin wood. At first sight it must have seemed madness to send such craft into a harbour so well armed as Zeebrugge, which bristled with guns. The men from the blockships had to be taken off, and it was decided that for this purpose no craft were so suitable as the easily manœuvred M.L.s. Lieutenant S. S. Bonham-Carter, R.N., who had taken in the *INTREPID*, informed Admiral Keyes that Lieutenant Dean's conduct was "simply magnificent." In clearing the canal, the steering-gear of the M.L., which had the *IPHIGENIA*'s cutter in tow, jammed, so that Lieutenant Dean had to steer his boat with his engines, and he escaped from the inferno in which he had become involved only by keeping as close as possible to the mole. Lieutenant J. C. Keith Wright, R.N.V.R., of M.L. 416, was lying seriously wounded, two of his crew had been killed, and the little ship was a veritable shambles. There were now 101 men in her, and it was necessary for the safety of the survivors to cut adrift the cutter. Having miraculously cleared the end of the mole, and reached the open sea, Lieutenant Dean then shaped a course which brought him in touch with the destroyer *WARWICK*, in which Admiral Keyes was flying his flag.

The rest of the story consists of the retirement of the force back across the North Sea. The essential object of blocking the canal had been accomplished. The enemy had been completely surprised, and the boasted impregnability of the Belgian coast had received a shock on this historic night. Almost every kind of ship, big and small, had been engaged, and the officers and men had upheld the highest traditions of the sea. The men of the Royal Navy and Royal Marines had co-operated in a spirit of comradeship with the yachtsmen and fishermen and merchantmen to achieve the most daring as well as picturesque raid which had ever been carried out. Well organised and well executed, it had a psychological effect on the armies in Flanders and the people at home at a time when confidence as to the final result of the war needed reinforcing.

The Ostend operation did not succeed. The two blockships SIRIUS and BRILLIANT got aground outside the harbour, but the crews were rescued in the most gallant manner, under heavy fire, by Lieutenant R. Bourke, R.N.V.R., in M.L. 276, and Lieutenant K. R. Hoare, R.N.V.R., in M.L. 283. In this operation the M.L.s also did excellent work with their smoke screens.

The net result of the Zeebrugge raid was that for the next three weeks or so the smallest boats alone could enter the channel and then only by day. The Bruges-Ostend canal could be used to some extent by the submarines putting to sea, but this was very inconvenient. So firmly and effectually were the blockships sunk in the canal that, after months of effort, first on the part of the Germans, and then, after the war, on the part of a British force, it was not until January 1921 that the THETIS, the last of the blockships, was successfully shifted.

On May 10th the VINDICTIVE was gallantly taken into Ostend, and sunk in the fairway, the motor launches again distinguishing themselves by the skill and gallantry exhibited. The outstanding feature was again the rescue of the blockship's crew. Lieutenant G. H. Drummond, R.N.V.R., brought M.L. 254 alongside the VINDICTIVE, and embarked 2 officers and 37 men. Lieutenant Gordon Ross, R.N.V.R., the second-in-command of the M.L., and one deck hand had already been killed, and the coxswain wounded. Lieutenant Drummond himself had also been wounded in three places, but took his ship out of the harbour stern first, followed all the time by heavy machine gun fire. When the M.L. had finally cleared the entrance, she was in a sinking condition, and it was no easy matter to keep her afloat. By making S.O.S. signals continually to seaward, she was located by the destroyer WARWICK, and Admiral Keyes ordered a destroyer division to close her. She was found in such a bad condition, with most of her crew and many of the VINDICTIVE's men wounded, that everyone on board had to be transferred to the WARWICK, and the M.L. was ordered by Admiral Keyes to be destroyed.

M.L. 276 (Lieutenant R. Bourke, R.N.V.R.) had followed the VINDICTIVE into Ostend, and, engaging both piers with machine gun fire, then went alongside the VINDICTIVE after M.L. 254 had shoved off. After much search and

shouting Lieutenant Bourke, while still under heavy fire, managed to find Lieutenant Sir John Alleyne, R.N., and two ratings, all badly wounded, clinging to a skiff which had capsized in the water. These were the last of the survivors, and, under continued heavy fire, the M.L. came out of the harbour. She was hit in fifty-five places ; three of her crew were killed or wounded, but Lieutenant Bourke managed to steer her to the westward, and she was eventually taken in tow by a monitor. "I cannot speak too highly," remarked Admiral Keyes, "of the bravery of the M.L.'s coming alongside."

So closed the efforts to block the Belgian ports. Meanwhile, the submarine warfare was being fought to a standstill, and fresh evidence was being supplied that the determination of the drifters and the declining spirit of the submarine crews were having a marked effect on the campaign. An incident which occurred off the north-east of Ireland in the early morning of April 30th, 1918, may be cited. The drifter *Coreopsis* (Lieutenant P. S. Peat, R.N.R.), whilst on patrol, sighted the conning-tower of a submarine about eleven miles E. by N. of the Maidens. The drifter opened fire at point-blank range, the first and third shots exploding. Accurate shooting was difficult owing to the heavy swell. The enemy rapidly drew away, then stopped suddenly and fired a white Very light. On approaching the submarine, the *Coreopsis* was amazed to hear all the Germans shouting together, "I will surrender"; "We are your prisoners." Lieutenant Peat was so surprised that he could but assume the submarine was damaged, for no attempt had been made to respond to the British attack. He passed close astern of the submarine, the Germans continuing to shout that they desired to be taken prisoners. Lieutenant Peat manœuvred his vessel so as to bring the enemy into the moon's rays and again opened fire, for the Germans' gun was plainly visible, and it was, as a precaution, necessary to put that gun out of action. Four or five British shells hit the target, but still no reply came from the enemy. So approaching within hailing distance, with his gun trained on the submarine, Lieutenant Peat informed the enemy that, if the submarine attempted to move, she would be fired on again.

At 4 a.m. other patrol craft began to arrive on the scene, and Lieutenant Peat now sent away his boat with

three hands to approach the submarine, but not to close her. He then told the Germans to jump into the sea and the boat would pick them up. The order was obeyed, and thus nine prisoners were brought on board. But in the meantime the German commanding officer and some of his men remained to sink the submarine. Altogether the boat of the *Coreopsis* took three officers and twenty-four men prisoners in the most unexpected circumstances. As they came on board the drifter, Lieutenant Peat searched each one carefully for papers and arms and then signalled the Senior Naval Officer at Larne. Escorted by other auxiliary craft, the little ship subsequently had the privilege of entering Larne with her captures. Perhaps no one was more surprised than Lieutenant Peat. "Why did you not attack me?" he asked Lieutenant-Commander G. Krech, the captain of the submarine. In broken English the German replied, "I had been down two days; my crew were all ill with gas; I could not submerge, as my conning-tower was damaged, and as I saw you still firing and saw other ships—what was the use?" So this steel ship armed with a 4.1-inch gun and torpedoes, carrying a crew of thirty-six, surrendered to a small, slow surface vessel armed with only a 6-pounder gun, and a crew of twelve. For this exploit Lieutenant Peat received a D.S.O., and his second-in-command, Skipper G. E. Stubbs, R.N.R., received a D.S.C. A sum of £1,000 was divided among the crew. The submarine was the UB85. The prisoners stated that she had left Heligoland on April 16th, but had been compelled by British patrols to keep submerged continually. It was subsequently revealed that Lieutenant-Commander Krech, with a crew consisting in the main of inexperienced men, had been most unsuccessful in his attacks on merchant ships, having exploded six torpedoes without result. So that when he was confronted with the little drifter, he and his men were well content to surrender and find safety as prisoners.

In view of the increased effectiveness of the Dover barrage and the advent of summer, with its longer days, more submarines chose to go north-about round Scotland, but they were hunted without mercy. Some boats still came through the Dover Straits, but at considerable risk. On May 2nd the drifter *Lord Leitrim* made UB31 dive, and

she blew up in the minefield. This event occurred five minutes past eight in the morning. Five minutes later in another part of the Dover area UC78 also was destroyed by the same means. In the course of the same month—on the 26th—the armed yacht *Lorna*, at about ten o'clock at night in Lyme Bay, destroyed UB74 with depth charges. Four survivors shouting "Kamerad" were sighted and one was rescued, but he died three hours later. On the last day of the month UC49 was sunk. In this case the armed trawler *Bombardier*, the destroyers FAIRY, MEDEA, and LOCUST, three other trawlers, drifters, and a motor launch took part and all dropped depth charges. In addition, an aeroplane was aloft giving some aid in spotting, and dropping bombs.

The effective mining of the Dover Straits had practically closed the southern end of the North Sea to the Germans. There still remained the exit by the northern end, and this problem was now attacked. On June 18th, 1918, the work began of laying a huge mine barrage right across the North Sea to the Norwegian coast, in accordance with plans, the execution of which had been delayed by a shortage of mines and other material. The mines used in this operation were partly British and partly American. The scheme took months to complete, but even in its initial stages it proved useful. On the very first day two German submarines were damaged by this means, and as time went on the passage became almost as perilous as the Dover Straits. Even when the armistice came the northern barrage was still incomplete.

In the meantime the Dover barrage continued to fulfil its purpose, and in this area and elsewhere further toll was taken of the enemy's under-water craft. On June 20th UC64 was destroyed, seven Dover drifters and a trawler sending her into the mines. At the beginning of July, Germany had about 87 submarines in north European waters and 33 based on Pola and Cattaro. The first-mentioned included the so-called cruiser submarines, which operated across the ocean. On July 10th two Dover drifters accounted by means of depth charges for the loss of UC77, in charge of a comparatively inexperienced officer. Nine days later, in the North Sea, UB110, on her maiden cruise, was sunk primarily owing to the action of M.L.s 263 and 49, assisted by the destroyer

GARRY and the trawler *Strathclyde*. On July 27th trawlers and a destroyer also accounted for the UB107 off the Yorkshire coast. On August 13th came the loss of UB30 in the North Sea, owing to the efforts of the armed trawler *John Gillman*, while on August 29th UB109 was sunk in the Dover barrage on her way home from the Azores.

The tide of affairs had now evidently turned, and the German shipyards were finding it no easy matter to keep pace with the losses at sea.

On September 9th the northern barrage was responsible for the loss of U92, and on the sixteenth day of that month UB103 was destroyed in the Dover area, in the usual manner. This proved to be the last submarine to be sunk in that area. The net result of the Folkestone-Gris Nez barrage—that is to say, the combination of mines below, with drifters, trawlers, M.L.s and other craft on the surface—had been the destruction of no fewer than ten enemy submarines between December 19th, 1917, and September 16th, 1918. By this date the northern barrage was already very effective. On September 19th it caused the loss of UB104, and on the 25th of U156, while the losses of U102, UB113, and UB127 were most probably due to the same cause.

On October 17th, the final stage of the Belgian coast operations began. Early in the morning Admiral Keyes proceeded into Ostend, though the retreating enemy were not yet clear of the town. A light battery at Le Cocq and a heavy battery near Zeebrugge opened fire on the British ships, and as the presence of the naval forces might, it was thought, endanger the lives of civilians, Admiral Keyes re-embarked and withdrew his ships, leaving behind four M.L.s as an inshore patrol. In the evening the King and Queen of the Belgians visited Ostend, and next day British minesweepers proceeded to clear the minefield off that port, but, owing to the heavy shelling from Knocke battery, had to withdraw. On the following day the same thing happened, but some of the paddlers and M.L.s managed to get inside the mole at Zeebrugge, and destroyed some mines. On the 19th, aircraft reported that the Belgian coast was clear of Germans and that Knocke battery had been blown up. Minesweepers then began to work off Ostend, but in the course of the operations

the paddler *Plumpton* struck a mine. Though seriously damaged, she was beached. Thus Ostend, Zeebrugge, and Bruges were reoccupied. On their evacuation, the Germans destroyed four of their submarines, while at this period UB123 met her fate on a mine in the northern barrage.

The danger to the British forces from the mines off the Belgian coast still continued, with the result that the monitor M. 21 foundered on a mine off Ostend, and on the following day M.L. 561 also struck a mine off that port, her commanding officer losing his life. Bad weather had set in, which prevented sweeping, but by the 26th the area off the entrance had been cleared and work by the salvage section was begun on the sunken craft at Ostend harbour mouth.

In the meantime the enemy was recalling submarines from the Atlantic and Mediterranean. The Germans had planned a large concentration of submarines in the North Sea with a view to a big offensive, but knowledge of this intention had reached the British authorities and every trawler and drifter that could be spared was sent from the English Channel to the Firth of Forth. Nothing, however, came of the threat. In fact, by October 26th the whole submarine situation had improved so considerably that the Admiralty allowed outward-bound steamers from Liverpool to proceed independently and unescorted. Two days later such U-boats as were ready for sea left Pola and Cattaro for the last time, bound for Germany. One submarine officer, even in these last days of the war, tried to win enduring fame where others had failed. On October 28th UB116 made another effort to get into Scapa Flow, but vigilance was still being maintained, and she was destroyed by mines. On the last day of that month, the Germans, having evacuated the Adriatic and destroyed their ten remaining submarines at Pola and Cattaro which had not succeeded in getting away, the Austrian Emperor made over the Austro-Hungarian fleet to the Jugo-Slav National Council. Thus the curtain dropped on the final act of the naval operations in the Mediterranean except for the torpedoing of the old battleship *BRITANNIA* off Cape Trafalgar on November 9th by one of the submarines returning to Germany, and the sinking of the last enemy submarine. This submarine was U34, which was sighted

by M.L.s 373 and 155 in the Gibraltar area, both of whom attacked her. The PRIVET came up and also joined in the attack, and eventually the enemy was destroyed.

The narrative of the last phase of the enemy's desperate efforts to sever the sea communications of the Allies would be incomplete were no mention made of the concentrated attacks by means of mines during 1918 on the Anglo-Dutch trade, the Scandinavian convoys, and the transports carrying the American troops to Europe. In addition the enemy attempted to embarrage the Grand Fleet. A great minefield was laid by him in a rough crescent shape off the east coast of Scotland. The essential feature of the scheme was that the mines were laid a long way to seaward beyond the sight of land, the greatest distance being about forty-five miles off Bell Rock. This barrage was begun in April 1918 and the work went on until October. There can be little doubt but that the great concentration in the latter month of German submarines was part of the scheme. The presumption is that, if the mutiny had not broken out in the High Seas Fleet, it would have put to sea in an endeavour to tempt the Grand Fleet on to this crescent-shaped barrage and within striking distance of the moveable lines of submarines. Submarine after submarine came across the North Sea during the summer and dumped its load of mines in pre-arranged positions. But, unfortunately for the enemy, the mines were discovered almost as quickly as they were laid, and were secretly swept up. When, on November 15th, 1918, the German Admiral in the KÖNIGSBERG was ordered to meet Admiral Beatty at a rendezvous off the Firth of Forth, he arrived late with the apology that he had proceeded southward to avoid a German minefield. The fact, though he did not know it, was that the British sweepers had cleared it away long ago!

The thoroughness of the minesweepers' work was one of the marvels of the war. If a chart of the British Isles be taken and a line be drawn, following the coast from Land's End up the English Channel and North Sea as far as Moray Firth, some conception may be formed of the daily sweeping of "lanes" which these little craft kept safe for shipping practically without a break. But besides these, other daily sweepings were carried out in such areas as the North Channel, the approaches to

Liverpool, and, of course, the entrances to all naval bases. Periodical sweeping was also carried out farther to seaward. Similar operations had also to be undertaken in the Mediterranean, along the French, Italian and North African coasts, and in the Ægean, where enemy submarines laid their mines profusely. On October 30th, 1918, came the signing of the armistice at Mudros between Turkey and the Entente Powers, and on the following day the clearance of the Dardanelles minefield began. Minesweepers, trawlers, drifters, and M.L.s commenced this dangerous operation and destroyed over six hundred mines, so that by the twelfth of November the Allied Fleet was able to pass the Dardanelles, reaching Constantinople on the thirteenth.

Throughout the war the Germans had laid about 11,000 mines in proximity to the British Isles in 1,360 groups. But so thorough had been the sweeping operations that of these, only two groups had remained undetected. After the armistice, the labours of the minesweepers continued unabated, for both enemy and Allied mines had to be destroyed before the safety of the seas was restored, enabling the merchant shipping of the world to proceed on its lawful occasions. In Home Waters alone this task meant a close search of 60,000 square miles of sea. Barrages and ancient enemy minefields, and long-avoided dangerous areas had to be cleared, and a British sweeping flotilla had even to be based on Holland for months to clear the Scheveningen area and the southern Dutch waters. This work entailed a year's hard active service, but by October, 1919, very few mines were left in any area. The officers and men could take pride, when the last mine had been accounted for, that 23,000 moored mines had been swept up, though not without further loss of life.

Some reference must be made to the situation in the Straits of Otranto in the closing months of hostilities. In March 1918 a more vigorous offensive was decided upon. As a mobile barrage, sloops, destroyers, drifters, submarines and M.L.s were operating in this area, and, as already described, a fixed barrage of nets from Otranto to Fano was being constructed. The undertaking was a big one. The average depth of the straits at this point was about 450 fathoms, so that, if only the submarine's hull could stand the pressure, the enemy had all the depth he could desire.

In order to foil him, it was agreed that the nets should be 150 feet deep, the top of the net being 33 feet from the surface. The barrage began east of a deep minefield laid a few miles to the east of Otranto and continued right across to Fano.

These plans meant heavy work for the vessels of the Auxiliary Patrol, operating under many difficulties, but the monotony was occasionally relieved by cheering news of success. On April 18th M.L. 168 sighted a large enemy submarine in the straits, attacked her and probably damaged her. The worm-eaten drifters were being gradually replaced by steel drifters sent out from England, but these did not arrive any too soon. On May 26th the drifter *Clare and Alice* sank in the Adriatic in consequence of a leak due to the destruction of the bottom planking by worms. Though submarines were still penetrating the barrage—we know that U64 left Cattaro on the afternoon of June 9th and passed the Otranto barrage on the surface about 6 a.m. on the 11th—it was becoming a serious menace to the enemy. On August 1st, UB53 left Pola in the evening. On the 3rd she was proceeding submerged, so as to pass through the Otranto area unobserved, when at about 5 p.m. she fouled the mined nets. Two mines exploded and seriously damaged her, so that she came to the surface, where she found that the damage to her hull was too great to be repaired. The crew, therefore, abandoned her, and the survivors were picked up by a British destroyer after being in the water for three and a half hours. It was not until the last day of September that this Otranto net barrage was finally completed, and a few weeks afterwards the German submarines were recalled to the North Sea. As in the case of the Dover Straits, the drifters and other small craft had spent a trying time, continuing month after month until the months became years; when the day arrived for them, too, to be recalled to their home waters no one could begrudge them their well-earned return to civil life and peaceful fishing.

Elsewhere in the Mediterranean, enemy submarines were most active and they were not content with torpedoing and mining ships of all descriptions. Some of them, for instance, U20 and UC73, were employed as transports between Austria and the Tripolitanian coast, whither they proceeded frequently, bringing back, among other articles,

saddles and sundry leather goods for the use of the armies. During the early part of the summer, the chief submarine spheres of activity were off the east coast of Sicily, the south and east of Malta, the west coast of Sardinia, and the northern African coast. Submarines, numbering upwards of 30, laid their mines in such places as the Messina Straits, off Brindisi, Cape Santa Maria di Leuca, and Gallipoli (Calabria).

The great submarine adventure, persisted in month after month, had cost the enemy dearly. From all causes, over 200 German and Austrian submarines had been accounted for; by far the largest number had been sunk in the North Sea, and in most instances by mines and depth charges. The officers and men of the Auxiliary Patrol could take pride in their contribution to this result. No one realised better than the Germans the effective work which they had done. Beginning in August 1914 with a mere handful of men and ships, the "New Navy," improvised after the war had begun, had increased at the signing of the armistice to over 39,000 ranks and ratings of skippers and fishermen. Large numbers of officers and ratings of the R.N.R. and R.N.V.R. had also been pressed into the service. The number of yachts, patrol gunboats, trawlers, whalers, M.L.s, drifters, motor drifters, motor boats, minesweepers, had reached the enormous total of 3,685 vessels by the end of the war. No other country could have provided so large an auxiliary force of men and ships. And the price of Admiralty had been high. No fewer than 2,304 officers and men had been killed, and 445 vessels had been destroyed, chiefly owing to mines. But by diligently keeping the seas for over four years, in all weathers and despite the enemy's stratagems, this service had succeeded in making an essential contribution to the victory of the Allied cause.

CHAPTER X

THE INTENSIVE SUBMARINE CAMPAIGN (III)

July 1917—November 1918

THE two months July and August 1917 were marked by a welcome reduction in the amount of damage done to merchant shipping by the intensive submarine campaign. The number of British vessels sunk in July was 88 and in August, 84. These losses were still terribly high, but they compared favourably with the total of 116 for June and 155 for April. They represented a gross tonnage of 319,931 and 310,551 respectively, and they were accompanied by the loss of 401 lives (passengers and crews) in July and 415 in August.

On July 3rd the *Mongara* (8,205 tons) was twice attacked in the Mediterranean. At 9 a.m. her master, Mr. G. Hamlyn, saw a torpedo approaching which had been fired at long range, and by putting his helm over he successfully evaded it. Later in the day, when she was only about ten miles from the port of Messina, a torpedo struck the ship just forward of the engine-room, and in ten minutes she had sunk. All those on board, both passengers and crew, reached the shore safely in the boats.

On the same day the *Matador* (3,642 tons), with a cargo of grain, cotton, and munitions, from New Orleans, was making for the Irish coast when a torpedo was sighted 200 yards away on the port quarter. The ship was just straightening after a zigzag, and was consequently slow in answering her helm, and the torpedo struck her in the engine-room. The third engineer was killed outright, and a fireman was terribly injured by escaping steam, and died a few hours later in one of the boats. The master of the *Matador* (Mr. W. T. Owen) described the submarine, which shortly after came to the surface, as apparently one of a new type. She was, he said, "about 150 feet in length, with one gun mounted aft, and a wire over all which appeared to have wireless aerials rigged to it. She

had a semi-circular steel dodger rather than a conning-tower, and no periscopes were visible upon her. She had two torpedo tubes fitted in the bows outside the main structure; she was very easy to handle, and was painted a light grey above the water and a chocolate colour below. She had a boat and raft lashed down on the after-deck. There were eighteen men about her decks. There were no marks or numbers visible upon her, and she flew no flag." After being twenty-four hours in the boats, and sighting two other submarines besides the one which had torpedoed them, the survivors of the *Matador* were picked up by an American destroyer, and landed in Bantry Bay.

The next day much heavier loss of life occurred through the sinking of the *Goathland* (3,044 tons), which was torpedoed about ten miles from Belle Isle, twenty-one lives, including that of the master, being sacrificed.

On the 8th the *Obuasi* (4,416 tons) was accompanying the *Onitsha* (3,921 tons) from the west coast of Africa to Liverpool. Both ships had called at Dakar to be fitted with guns, but as there were not enough to go round, a 12-pounder was mounted in the *Obuasi*, and the two ships made the homeward voyage in company. At noon the *Obuasi* was struck by a torpedo, which flooded the stokehold and put the engines out of action. Simultaneously two submarines were sighted, and the master, Mr. Percy Sola, ordered the crew into the boats. He himself, with the two gunners D. Richardson and R. Bradbeer, remained on board, retaining the gig for their own use, and commenced firing at a submarine which was chasing the *Onitsha*. They fired five shots, and the *Onitsha* got away safely. Two more torpedoes were then discharged at the *Obuasi*, the first one passing under her, and the second striking her and causing her to list considerably. The master and gunners then took to the gig, and the submarine came alongside and made them prisoners; it then fired some shots into the *Obuasi*, which soon afterwards sank. The self-sacrifice of Captain Sola and his gunners was highly and deservedly commended, as by remaining on board and firing their gun they diverted the submarines' attack upon themselves, and undoubtedly saved their sister ship. The gunners received mention, and the master the D.S.C. The rest of the crew were picked up the same evening by a destroyer, and landed at Queenstown.

On the 10th the *Seang Choon* (5,807 tons) was torpedoed and sunk with a loss of 19 lives, and the *Garmoyle* (1,229 tons) with a loss of 20, including the master.

On the 11th the *Muirfield* (3,086 tons), from Portland, Oregon, to Dublin, was twice attacked in the Atlantic, and the second time was sunk. From 5.20 to 8.20 a.m. she successfully maintained a running fight with a submarine upon the surface, the enemy firing forty rounds, and the *Muirfield* twenty-eight, without a hit on either side. The chase was then abandoned. At 10.45 p.m. she encountered a second submarine, and was torpedoed. The explosion stopped the ship, and killed two men, besides putting the gun out of action. The chief officer and the wireless operator were taken prisoners. After two days in the boats, the rest of the crew were picked up by the *Phrygia*, and landed at Gibraltar. For the successful three hours' fight which he put up against his first antagonist, Mr. E. G. Sturgeon, master of the *Muirfield*, was awarded mention.

The 15th and 16th of July were both days of disaster, involving the loss of a dozen British vessels. Among those lost on the 15th was the *Trelissick* (4,168 tons), with a cargo of grain from Boston, U.S.A. She also had on board the crew of the *Exford* (5,886 tons), whom she had rescued the previous day after their own ship was torpedoed. The master of the *Trelissick* was taken prisoner, together with his gunners, but the rest of the two crews were rescued by an American patrol boat and brought into Brest.

On the same day occurred one of the most gruesome of all the incidents recorded during this barbarous campaign. The *Mariston* (2,908 tons) was torpedoed and sunk at 3 a.m. Out of a crew of 29, the only survivor was the cook. There were two explosions, and the ship sank very rapidly. The cook secured a hatch, and drifted about on this precarious raft for fifteen hours before he was picked up. When the ship first went down, he counted 17 of his shipmates clinging to various bits of wreckage in the water. The submarine came to the surface, and her officer stood for some minutes looking at his victims struggling for their lives. There was no ship in sight, and he could have rescued them all if he had been so minded. Then something happened which even he did not care to watch, and he closed his conning-tower, and submerged. One by one the cook saw his comrades disappear,

each uttering a piercing scream as he was dragged below. A school of man-eating sharks had completed the ghastly work which the submarine began.

Among the vessels sunk on the 16th were the *Ribston* (3,372 tons) with a loss of twenty-five lives, including the master, the *Valentia* (3,242 tons) with a loss of three, and the *Tamele* (3,932 tons) with a loss of one. Early in the morning the *Tamele* was shelled for forty minutes by a submarine which kept well out of range of the ship's gun, and escaped from this encounter only to be torpedoed the same evening. The master, Mr. T. H. Beard, with the passengers and crew, spent the whole night and part of the next day in the boats, but were ultimately rescued and landed at Valentia.

In the sinking of the *Eloby* (6,545 tons), which was torpedoed on the 19th, fifty-six persons, including the master, lost their lives. The *City of Florence* (5,399 tons) was sunk on the 20th, the master, Mr. J. C. Gray, and crew spending thirty-six hours in the boats before they were picked up. The same day the *Salsette* (5,842 tons) was torpedoed and sunk off Portland Bill, and fifteen of the crew lost their lives. There was heavy loss of life again on the 21st, when the *Paddington* (5,084 tons) and the sailing vessel *Harold* (1,376 tons) were both sunk. Of the two crews more than forty men were drowned, including in each case the master.

The month of July ended with a brutal case of wholesale murder, to which reference has been already made in connection with a similar act of barbarity on the 8th of April. The *Belgian Prince* (4,765 tons) was torpedoed at 8 p.m. on the 31st; the master was taken prisoner by the submarine and sent below; and the whole of the crew were ordered on the submarine's deck. There they were robbed of their possessions, their lifebelts were taken away from them, and the submarine submerged. Three only of the forty-two survived to bear witness to the atrocity committed, the chief engineer, the cook, and a Russian seaman; they had managed to hide lifebelts underneath their coats, and were picked up the next morning by patrol boats.

August began badly; twenty-five lives were lost on the 1st through the sinking of the *Karina* (4,222 tons) and the *Laertes* (4,541 tons). On the 4th forty-two more lives were

sacrificed, about equally divided between the *Cairnstrath* (2,128 tons) and the *Countess of Mar* (2,234 tons). In both these cases the master was among the drowned. On the same day the mate of the *Azira* (1,144 tons) sighted a periscope, but mistook it for a dan-buoy, and kept on his course until escape became impossible.

Among the vessels lost during the next few days were the *Kathleen* (3,915 tons), whose master was drowned, although the crew got away safely in the boats, and were picked up by trawlers; the *Rosemount* (3,044 tons), which was hit eight times by shells, the submarine keeping well out of range of the ship's guns, and was on fire when her master, Mr. S. Cook, himself severely wounded, ordered her to be abandoned; and the *Port Curtis* (4,710 tons), which was sunk by bombs and gunfire after a fight lasting four hours. Her master, Mr. William Mason, who was also badly wounded, received the D.S.C.

The master of the *Blagdon* (1,996 tons) and eleven of his crew lost their lives when the ship was torpedoed on the 9th, and eleven more lives were lost on the 11th by the sinking of the *Sonnie* (2,642 tons). A larger vessel, the *Turakina* (9,920 tons), was sunk with a loss of two lives in the English Channel two days later.

Among the many merchant vessels lost during the second half of August was the *Elswick Lodge* (3,558 tons) on the 20th. Four of her crew were killed when the torpedo exploded, and the remainder, twenty-three in number, spent eighteen hours in the starboard lifeboat before they were rescued by the *Kouang-Si* of Marseilles. On the same day the *Incemore* (3,060 tons) was torpedoed and sank in four minutes; and fourteen lives were lost through the sinking of the *Edernian* (3,588 tons) a few miles out from Southwold.

On the 21st the Cunard Company's ship *Volodia* (5,689 tons) was torpedoed and sunk in the Atlantic. Ten lives were lost at the time of the explosion, but magnificent seamanship was afterwards displayed by the master, Mr. J. A. Wolfe, and by the second officer, Mr. W. A. Line, in bringing their boats safely into port in the English Channel. In very heavy seas, with a gale blowing most of the time, and encountering terrific squalls of rain, hail and wind, during which both boats lost their sea-anchors and their rudders, they nevertheless covered more than

three hundred miles in three and a half days, and reached Plymouth and Falmouth without further tragedy. The latter part of the time the rations in the captain's boat were reduced to one biscuit and one dipper of water a day. Special praise was given to Ah Yee, the Chinese quartermaster, who for many hours steered the second officer's boat without assistance, besides taking charge of the other Chinamen, and seeing that all orders were obeyed.

Early on the morning of the 21st nineteen vessels left Lough Swilly in single file, and proceeded to form into convoy formation of six columns. They were escorted by two cruisers and six destroyers. The *Devonian* (10,435 tons) was the commodore vessel, and from her the others took their stations. By 11.30 the formation was complete, the *Devonian* being at the head of the third column, with the *Vasari* immediately behind her, and the *Roscommon* (8,238 tons) occupying the second place in the column on her port side. No submarine had been sighted, but a few minutes before noon the *Devonian* was torpedoed. A second torpedo just missed the *Vasari*, and a third struck the *Roscommon*. By this time the periscope of the submarine was sighted, but she dived quickly, and had disappeared before one of the destroyers reached the spot. She had taken a great risk, and had succeeded in sinking the two largest ships in the convoy, and causing the remainder to turn back into Lough Swilly. The master of the *Devonian* (Mr. A. W. V. Trant) made strong representations about the convoy arrangements, especially as to the unwisdom of assembling the convoy in such an unprotected area. The string of vessels extended for twelve miles, and the manœuvring necessary to bring them into the required formation occupied from six to seven hours, during which time a hostile submarine could watch the whole proceeding. Captain Trant was afterwards appointed to the convoy section at the Admiralty, and remained there till the end of the war.

The British India Company's ship *Malda* (7,896 tons) had come successfully through five encounters, twice by the use of her gun, once by weather and twice by the excellence of her look-out, but on August 25th she was torpedoed south-west of the Scilly Isles, and sank a few hours later, with the loss of 64 lives.

On the 26th the *Assyria* (6,370 tons), like the *Devonian*



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THE LOSS OF A BRITISH MERCHANT SHIP.

a few days earlier, was torpedoed while leading one of the columns of a convoy. Nothing was seen of the submarine at the time, but the torpedo came from the side which had been left unprotected owing to the departure of one of the escorting destroyers. The ship was struck in the bow, the explosion wrecking the forecastle, but No. 2 bulkhead held, and Mr. W. Robertson, the master, decided to try to make the land. An hour later, in spite of the fact that a destroyer had been circling round her, the *Assyria* was struck again, this time amidships, and shortly afterwards she sank.

On the same day the *Durango* (3,008 tons), belonging to the Furness Withy Company, was attacked by gunfire by two submarines, and for five hours maintained the fight, by which time her ammunition was exhausted, and she was already sinking from the effect of a shell which struck her below the water line. More than once during the encounter she had made good use of smoke screens, and her gunners scored a hit on the conning-tower of one of her attackers, which gained her half an hour's respite while the other submarine went to the assistance of its consort. The damaged submarine was unable to submerge, and as soon as the *Durango* sank proceeded at high speed northward, evidently anxious to escape before any other ship arrived in answer to the *Durango's* calls.

On the 28th the *Hidalgo* (4,271 tons) was making for Archangel when she was torpedoed without warning, and was afterwards sunk by gunfire. All the boats but one were either smashed or swamped, and out of thirty-five men who left in the remaining lifeboat thirteen died from cold and exposure. The rest of the crew spent five days and four nights in the boat, with a temperature very near to freezing, and finally reached Kamo Fjord.

The next day the *Treloske* (3,071 tons) was attacked three separate times by submarines. Twice her master, Mr. T. Strike, successfully evaded a torpedo, and once very nearly succeeded in ramming the submarine which fired it. The third time, at 10.15 p.m., when the position of the moon rendered the ship a specially good target, a torpedo struck the engine-room, and the *Treloske* sank within ten minutes. The D.S.C. was awarded to the master, and the gunlayer received mention.

Although the U-boats were still sinking far too many

merchantmen, the two months of July and August were marked by many notable escapes from submarine attack.

On July 6th the *Glenturret* (4,696 tons) with a cargo of wheat from Australia was attacked at a time when she was cleaning fires, and her steam was consequently low. The Chinese crew were at first in a great panic, but afterwards worked well, and increased the speed of the ship from 10 to $11\frac{1}{2}$ knots. The submarine fired fifty shells, without scoring a direct hit, and after two hours the chase was abandoned. The master, Mr. W. H. Baker, was awarded mention.

Mr. H. G. Speed, master of the *Coblentz* (1,338 tons), Mr. Peter Urquhart, master of the *Clan Chisholm* (2,647 tons), and Mr. Henry Johns, master of the *Haslingden* (1,934 tons), whose ships came successfully out of action on the 7th, 8th, and 9th respectively, were each awarded the D.S.C.

Another narrow escape on July 8th was that of the *Plutarch* (5,613 tons). One torpedo passed between her rudder and her logline, and a second close alongside. Her escape was mainly due to the skilful handling of the vessel by her master, Mr. F. S. Leicester, but it is probable also that her dazzle painting—she was painted with a stern on her bows and bows on her stern—confused the enemy.

The same day the *Cavour* (3,156 tons) and the *Cliff tower* (3,509 tons) were nearing the Lizard in company, the *Cavour* only being armed, when a torpedo was fired at the *Cliff tower* and missed its mark. The *Cavour* at once turned and fired two shots at the submarine, which dived. Shortly afterwards a destroyer and an airship arrived on the scene, and the two merchant ships went on without further molestation.

On the 16th Mr. W. P. Purdon, master of the *Benguela* (5,520 tons), successfully maintained a running fight with a submarine for six hours, during which time the enemy fired one torpedo and upwards of 250 shells. Whenever the submarine came within range, the ship's gun returned the fire; and the master repeatedly altered his course, so as to prevent the submarine bringing two guns into action, or getting between the ship and the sun's glare. He received the D.S.C., and the gunlayer, Lance-Corporal Adlam, the D.S.M.

The advantage of the improved armament with which merchant ships were being fitted was well illustrated on the 18th, when the *City of Canton* (6,692 tons) was attacked

at a range of about 13,000 yards, and was able to reply so effectively with her 4-inch gun that the submarine submerged and gave up the encounter. Mr. Alexander Gardner was the master.

Three days later, on the 21st, a similar success was gained by good shooting with a 4·7-inch gun. The *Polyphemus* (4,968 tons) was first attacked by a torpedo, which missed her by 200 yards, and then by gunfire. The submarine fired ten rounds, without making a hit, and the ship fired three, the last of which got home. Whether the submarine was sunk or only damaged was not known, but it disappeared. The master of the *Polyphemus*, Mr. E. S. Arrowsmith, and the gunlayer, C. H. Cummings, were both awarded mention.

In the last week of July, the *Baynyassa* (4,937 tons; master, Mr. G. B. Murray), the *Livonia* (1,879 tons; master, Mr. H. G. Orchard), and the *Devona* (3,779 tons; master, Mr. D. R. Murray), who had been in action already on June 20th, all turned the tables on their attackers by the accuracy of their gunfire, while the *Beacon Grange* (4,237 tons) escaped mainly through the skilful navigation of her master, Mr. W. Keslake. In all these cases decorations were awarded.

On the last day of the month, the *Hunsbrook* (4,463 tons) narrowly avoided a torpedo by prompt use of her helm, and then kept the submarine at bay with her gun, escaping finally under cover of smoke boxes and cowls. Her master, Mr. G. H. Sheppard, was awarded mention. A very similar escape was achieved the same day by the *Worsley Hall* (3,489 tons), which was attacked by two submarines simultaneously. The ship was missed by a torpedo, and then both submarines opened fire at long range. In this case also the master, Mr. H. E. Oliver, who was awarded the D.S.C., made skilful use of smoke screens, at the same time forcing the submarines to keep out of range of the ship's gun, so that after an hour and a quarter they gave up the chase.

On August 1st the *Glamorgan* (3,539 tons) and the *City of Colombo* (6,000 tons) were both in action, and came through unscathed. The *Glamorgan* (master, Mr. A. Balleine) was attacked at very close quarters, a torpedo fired from a distance of 200 feet passing under her stern. The submarine dived, but as soon as its periscope re-

appeared two shots were fired at it, the second of which was believed to be a hit. The *Glamorgan* proceeded on her course, the gun's crew remaining at their posts all night in case of further trouble, and reached port safely. The *City of Colombo* (master, Mr. J. S. Meria) was going to the assistance of a sailing ship which was in trouble when she was herself attacked by a submarine. The latter kept up a continuous fire for an hour and three-quarters, but the shells, though falling very close to the ship, never hit her. The submarine was of a large type, with a greater surface speed than that of the *City of Colombo*, and before long came within range of the ship's gun, when its commander found his fire returned so accurately that he gave up the chase. Three days later the *City of Colombo* sighted a second submarine, and fired four shots at it in rapid succession, causing it to submerge and disappear.

The same day, August 4th, Mr. T. W. Scurr, master of the *Mahronda* (7,630 tons), brought his ship successfully through a sharp encounter with a submarine of this large type, which mounted three powerful guns, and for an hour maintained extremely rapid fire, the shells bursting dangerously near the ship most of the time. Good gunnery, combined with skilful handling of the vessel, brought the *Mahronda* safely through.

The largest merchant ship in action during the month was the White Star liner *Belgic* (24,540 tons), outward bound from Liverpool to New York. On the 11th, early in the afternoon, the periscope of a submarine was sighted on her port bow, and immediately her helm was put over, and she tried, though unsuccessfully, to ram the enemy. A torpedo was then fired, and passed astern. The *Belgic's* master, Mr. W. E. Ingham, had already had experience in dodging a torpedo, when on board the *Haverford* the previous June.

Two other encounters during August, in each of which the attacking submarine was hit and damaged by the ship's gunfire, were those of the *Horseferry* (1,812 tons) in the North Sea on the 17th, and the *Ardendearg* (3,237 tons) on the 29th in the Atlantic. The respective masters, Mr. F. T. Skellern and Mr. J. Begg, each received the D.S.C.

During the remaining months of 1917, the heaviest losses

took place in October, when 79 British merchant ships, with a gross tonnage of 261,649, were sunk by submarines, and lives to the number of 578 were sacrificed. In September the number of ships sunk was 68, in November 56, and in December 76.

The *Peerless* (3,112 tons) was torpedoed on September 4th, suffering severe damage below the water-line, and sank in three or four minutes. Her master and two gunners were made prisoners.

The greatest loss of life occurred on the 7th, when the *Minnehaha* (13,714 tons) was torpedoed without warning twelve miles from the Fastnet, and forty-three were drowned. Again, on the 11th twenty-five lives were lost when the *Vienna* (4,170 tons) was torpedoed, the master being made prisoner.

The *Chulmleigh* (4,911 tons) was sunk on the 14th off the coast of Spain; in her case the entire crew were landed safely, with the help of Spanish fishing boats and the lighthouse keeper at Cape Salou. The next day the *Santaren* (4,256 tons), with a cargo of coal for Archangel, was struck by two torpedoes, and had to be abandoned. The crew spent six days in the boats, in very heavy weather, before they reached the Norwegian port Bremanger.

Among other vessels sunk with heavy loss of life during September were the *Arabis* (3,928 tons), the *Joseph Chamberlain* (3,709 tons), the *Saint Ronald* (4,387 tons), the *Greleen* (2,286 tons), the *Boynton* (2,578 tons), the *Kildonan* (2,118 tons), and the *Heron* (885 tons).

On September 19th an act of humanity was performed which deserves to be recorded, if only because such acts on the part of the enemy were so exceptional in this inhuman and barbarous campaign. When the *Arendal* (1,387 tons) had been hit three times by shells, the cargo of benzine upon her upper deck caught fire. Her master, Mr. C. Vermulen, and three of the crew were badly burned, while the chief officer and three other men were wounded by the shell-fire. The surgeon of the submarine attended to their wounds.

Among the encounters of the month, out of which the merchant ship succeeded in escaping, were those of the *Umgeni* (2,622 tons; master, Mr. J. C. Brett), which was fired on by two submarines on the 3rd, and by her return

fire kept them at a respectful distance; the *St. Edmund* (1,223 tons; master, Mr. G. C. L. Hunter), whose gunners hit and damaged the attacking submarine; the *Grelfryda* (5,136 tons), which was torpedoed and for a time abandoned, but afterwards re-boarded and brought into Bridlington Bay; and the *Brodmead* (5,646 tons), whose master and eleven of the crew were killed by gunfire, the ship, in spite of heavy damage, reaching Gibraltar without sinking; the last three all occurred on September 7th.

On the 10th the *Parana* (4,182 tons) almost ran down a submarine, which immediately fired a torpedo from about thirty feet astern. This was avoided, and the submarine opened fire soon afterwards from about 6,000 yards. The *Parana*, in the course of a long encounter, was hit once by shrapnel, but was saved from worse damage by the good seamanship of her master, Mr. I. J. C. Buret, and by the good shooting of her gun's crew. The master received the D.S.C., and the gunlayer the medal.

On the next day a brilliant five hours' action was fought in the Atlantic by the *British Transport* (4,143 tons), and resulted in the undoubted sinking of the submarine U49. In the early part of the engagement, the ship's accurate gunnery forced the enemy to drop out of range. About 9 p.m. the luminous tracks of two torpedoes were seen approaching, and the helm was put over, causing them to miss by about twenty feet. At 9.20, the sea being very phosphorescent, a luminous patch revealed the presence of the submarine on the port bow. The ship immediately altered course and rammed it. The submarine passed alongside with its bow high in the air, and two final shots from the ship's gun sent it to the bottom. The master of the *British Transport*, Mr. A. T. Pope, received the D.S.O., and the chief officer, C. M. St. Clair, the second officer, A. H. Bohner, and the chief engineer, D. A. Young, all received the D.S.C., while the wireless operator, J. V. Kininmouth, the second engineer, J. Mackey, and seven others of the crew were mentioned.

The *Thetis* (649 tons; master, Mr. A. F. Blazebrook) was the last ship in a convoy column, when she sighted a submarine only about forty yards away, and fired three shots at it, after which it disappeared. On the same day the *Hyndford* (4,286 tons; master, Mr. E. W. Rettie) fought a three hours' duel with a submarine, and success-

fully prevented it from coming near enough to use torpedoes ; and the *Rossia* (4,576 tons ; master, Mr. Herbert Lugg) also held off the enemy by the accuracy of her gunfire.

On the 15th the *Idomeneus* (6,692 tons) was torpedoed while under convoy, the fifth engineer and three firemen being killed by the explosion, but she was eventually towed into port.

The *City of Lincoln* (5,867 tons) was similarly torpedoed on the 18th. Mr. D. Jenkins, finding that his ship was still keeping afloat, refused time after time to leave her, and only did so finally on receiving an assurance from the commander of the escorting destroyer that he would be allowed to return on board immediately a tug arrived to take her in tow. Later on the engine-room bulkhead gave way, but in spite of this on the 21st he anchored the ship safely in Plymouth Sound.

The *Portaferry* (236 tons), a small unarmed ship, was engaged on the 26th in rescuing the crew of a torpedoed vessel, when she was herself attacked. This torpedo happily missed its mark, and Mr. G. H. Hiles, the *Portaferry's* master, brought his ship and the rescued crew to port in safety.

On the last day of the month, the *Drake* (2,267 tons) was hit by a shell in the starboard bunker, and had to be abandoned when the rising water had put out her fires. Her master, Mr. F. J. Carter, and her entire crew were afterwards picked up by the *Cronstadt* (1,674 tons), whose master, Mr. Robert Logan, had successfully fought an action lasting about four hours during the same day.

October began with the escape of the *Copenhagen* (4,540 tons), without any casualties, from a gun-fight in the Atlantic. Her master, Mr. David Jones, used smoke boxes with good result, as well as returning the enemy's fire effectively.

The loss of life throughout the month was exceptionally high, ranging from twenty to thirty-five lives on no less than fourteen separate occasions. In every case the vessel was torpedoed without warning. They were the *Forestmoor* (2,844 tons) on the 5th, the *Aylevarroo* (908 tons) on the 7th, the *Richard de Larrinaga* (5,591 tons), the *Memphian* (6,305 tons), and the *Greldon* (3,322 tons), all on the 8th, the *Eskmere* (2,293 tons) on the 13th, the

Semantha (2,847 tons) and the *White Head* (1,172 tons) on the 14th and 15th, the *Manchuria* (2,997 tons) and the *Hazelwood* (3,120 tons) on the 17th and 18th, the *Australdale* (4,379 tons) and the *Britannia* (765 tons) on the 19th, the *Algarve* (1,274 tons) on the 20th, and the *Cambric* (3,403 tons) on the last day of the month.

The case of the *Eskmere* was one of special tragedy. The ship went down in less than five minutes, and both the lifeboats were capsized. Seven men managed to hold on to the bottom of the starboard boat, and others who were imprisoned underneath it were heard knocking. An appeal was made to the Germans to help to right the boat, but instead they submerged so suddenly as to jerk the survivors off into the water. When these climbed back again, the knocking of their fellows underneath had ceased. Out of a crew of twenty-eight all told, seven only were rescued the next morning.

On October 2nd eleven vessels left Liverpool in convoy, bound for Eastern ports. All went well till they reached Malta, where a relieving escort of two sloops (*CLEMATIS* and *MIMOSA*) and four trawlers took charge of them. As the speed of the convoy was ten knots, and the trawlers could only make seven, the latter were sent back, and the escort was reduced to the two sloops, a quite inadequate protection for eleven vessels with valuable cargoes. On the morning of the 19th the *Pera* (7,635 tons), which was the outside ship on the starboard wing, was torpedoed amidships, and sank three hours later. The master, Mr. S. Finch, especially praised the conduct of the third engineer, Mr. Wilkinson, who went down through the stokehold and stopped the engines at great risk to his own life. The *CLEMATIS* turned back to assist the *Pera* and pick up her crew, and the convoy proceeded with only one sloop as an escort for ten vessels. The next morning, the 20th, the *Collegian* (7,520 tons), which had become the outside ship on the starboard side, was torpedoed, and sank in ten minutes. This time the submarine was sighted, and the *Collegian's* gunners, who remained at their posts until the master, Mr. F. E. Vincent, ordered them to leave the ship, managed to fire five rounds at it. The *CLEMATIS* had returned to the convoy, but left again to take the crews of the *Pera* and *Collegian* into Alexandria. The same

morning further attacks were made on the convoy, and the *Malakuta*, which was now outside, only escaped a torpedo by instantaneous action with the helm, and this with risk of collision. Her master, Mr. F. Whitham, said in his report, "Had the ship on my port hand not fallen out of the line and thereby given me more room, I should have been torpedoed or collided with her."

The torpedo which missed the *Malakuta* passed on, and was narrowly avoided by the *Maidan* (8,205 tons), the guide-ship of the convoy, and almost immediately a second torpedo approached the *Maidan* from astern, but was deflected from its course by a shot from the ship's gun. Mr. J. Montador, the master of the *Maidan*, also experienced difficulty in avoiding collision with the ship on his port side while he was escaping the torpedoes. The *Burma* (7,470 tons) was another ship in this convoy at which a torpedo was discharged; she also narrowly escaped destruction by quick manœuvring, and her master, Mr. J. Mitchell, reported the danger of collision as an added anxiety at the moment.

Certainly two, possibly three, submarines took part in the persistent attacks on this convoy, one of them being almost certainly sunk by a well-aimed shot from the *Maidan*. The whole incident illustrates the difficulties under which the convoy system laboured at this period, and it was quite arguable that the vessels would have been safer travelling independently than with so inadequate an escort.

Some other notable encounters in October were those of the *Alavi* (3,627 tons; master, Mr. C. F. Williams), and the *Orna* (4,783 tons; master, Mr. W. Buswell). Both these ships made unsuccessful attempts to ram the enemy, the *Alavi* being afterwards sunk by gunfire, with a loss of thirteen lives. The *Orna* escaped undamaged. The *Carmelite* (2,583 tons; master, Mr. H. Scott) and the *Comeric* (3,979 tons; master, Mr. J. R. Ridland) both successfully escaped destruction by prompt use of the helm, the torpedo in each case passing very close.

November showed the best results since the intensive submarine campaign began, the number of British ships sunk falling from seventy-nine to fifty-six. There were, however, several cases of very heavy loss of life.

On November 2nd the *Cape Finisterre* (4,380 tons) was

torpedoed and sunk, with the loss of thirty-five lives, including that of the master. An even heavier casualty list resulted from the sinking of the *Aparima* (5,704 tons), just after midnight on the 19th, when fifty-six were drowned, including seventeen out of twenty-nine cadets who were on board. The *Dunrobin* (3,617 tons) had been twice previously in action, and come through with honours, but on November 24th she was torpedoed off the Lizard, and the master and thirty of the crew were lost. But the worst tragedy of the month was the sinking of the Elder Dempster liner, the *Apapa* (7,832 tons), at 4 a.m. on the 28th, both because no fewer than seventy-seven lives were lost, about equally divided between passengers and crew, and because most of these deaths were due to the callous and quite unnecessary firing of a second torpedo at the ship just at the moment when the boats had reached the water, and had not had time to pull away.

Two vessels which succeeded in coming safely into harbour after being badly damaged by torpedoes were the *David Lloyd George* (4,764 tons) on the 17th, and the *Thornhill* (3,848 tons) on the 27th. Three others, the *Rodskjaer* (2,724 tons; master, Mr. E. G. Sturgeon), the *Southgare* (818 tons; master, Mr. J. Scott), and the *Cavallo* (2,086 tons; master, Mr. J. Howgate), owed their escape mainly to prompt and accurate gunfire. The *Marie Suzanne* (3,106 tons) had on the 19th fallen some distance astern of her convoy owing to her lack of speed, and was attacked in quick succession by two submarines. She forced both of them to submerge, firing ten rounds at the first one, and thirty at the second. The master, Mr. P. E. George, who afterwards received the D.S.C., gave high praise to his gunners for their coolness and good shooting, by which the ship was saved. The *Sardinia* (6,580 tons) on the 21st avoided a torpedo by a margin of only thirty feet, through the skilful navigation of her master, Mr. F. G. Cadiz.

December failed to maintain the improvement of the previous month, and the number of ships sunk by submarines went up again to seventy-six.

Four ships were torpedoed on the 1st, and three of them were sunk, the *Molesey* (3,218 tons), without loss of life, and the *Euphorbia* (3,109 tons) and *Rydal Hall* (3,314 tons), with a loss of thirty-seven lives between them. The

fourth, the *Helenus* (7,555 tons), was the commodore's ship of a large convoy. She was torpedoed when about fifty miles from the Lizard, and after listing ten degrees she righted herself and was able to proceed under her own steam. The wind, however, increased to a moderate gale with a heavy sea, and her master, Mr. C. A. Wilson, displayed fine seamanship in bringing her safely into port.

Two other vessels which were safely brought into harbour under great difficulties, and after being badly damaged by torpedoes, were the *Chyebassa* (6,249 tons), on the 8th in the Mediterranean, and the *Nyanza* (6,695 tons), on the 9th in the English Channel. The *Chyebassa* formed one of a convoy of thirteen vessels which left Port Said on December 3rd. When she was torpedoed the boats were manned and lowered, and ordered to stand by, but Mr. A. P. Logan, the master, found that only No. 3 hold had filled with water, and that there was no immediate likelihood of the ship sinking; he, therefore, had the boats re-hoisted, and eventually brought the vessel into Marsa Scirocco. Shortly after the explosion of the torpedo the *Chyebassa* had suffered additional damage by collision with the *City of Marseilles*, the ship next to her in the convoy; and half an hour after she had got under way again she sighted a submarine about 6,000 yards distant, and fired six rounds at it before her escort came up to protect her.

The *Nyanza* was the rear vessel of the central column of a convoy of twenty-three, travelling at $7\frac{1}{2}$ knots, under what appeared to be adequate protection, one of H.M. ships leading, and eight destroyers guarding the flanks and rear. The vessel was torpedoed at 8.35 p.m., nothing being seen of the submarine. The master, Mr. C. G. Smith, with Mr. Vaughan, the chief officer, and four others, remained on board till 2 a.m., and then, as the ship seemed to be sinking, they were taken into a destroyer till the tugs arrived at 7 a.m. They then returned on board, and the damaged vessel was towed into Falmouth. The casualties were heavy, five passengers and forty-four of the crew being reported missing, mainly owing to the heavy sea and the capsizing of one of the boats.

On December 3rd the *Leafield* (2,539 tons) sighted a submarine on her starboard bow and tried unsuccessfully

to ram it. The encounter is interesting as being apparently the first occasion on which a submarine put up a smoke screen to cover her retreat from a merchant ship. The *Leafield* and her master, Mr. W. McCone, had been in action more than once before, and had come through unscathed.

From midnight till 3.30 the next morning the *Lord Dufferin* (4,664 tons) was engaged with a submarine, which fired two torpedoes at her, and also attacked with rapid gunfire. The first intimation of anything unusual was a Morse signal accompanied by a curtain of smoke; the master, Mr. J. Anderson, was suspicious of the signal on account of its blue colour, and did not reply to it. Both torpedoes were very narrowly avoided, and the ship returned the gunfire promptly and escaped without being hit.

Some other vessels whose excellent gunnery was their salvation were the *Penmount* (2,314 tons; master, Mr. S. R. Valler), on the 10th, the *Eastern City* (5,992 tons; master, Mr. E. Vooght), on the 11th, and on the 20th three ships which were voyaging in company: the *Sorrento* (2,892 tons; master, Mr. W. Stephens), the *Seattle* (5,133 tons; master, Mr. J. M. Bell), and the *Polaria* (3,546 tons; master, Mr. R. M. Innes).

At 3.30 p.m. on the 19th the Cunarder *Vinovia* (7,046 tons) was torpedoed when she was about ten miles from land. At 4 p.m. a small tug arrived, and commenced to tow, but as the ship seemed to be sinking a patrol boat soon afterwards took off those of the crew who had not already left. The master, Mr. S. Gronow, still believed it possible to bring the ship into port, and pluckily remained on board for four hours longer, steering her and from time to time in complete darkness investigating her condition. At 8 p.m., in spite of all his efforts, she sank about five miles from the beach, and the master was thrown into the water, to be picked up about two hours afterwards. If more power-tug assistance had been sent, and if Captain Gronow had not been on board alone, he might not improbably have brought the *Vinovia* to Penzance.

While the conduct of the officers and crews of the mercantile marine throughout the long and trying submarine campaign was in almost every instance beyond all

praise, and marked by amazing steadfastness, resource, and loyalty, there were a few occasions—very few—on which it fell a little short of the general high standard. The case of the *Vinovia* just related was one instance; a rather similar one occurred on the 24th of the same month, when the *Elmleaf* (5,948 tons) was torpedoed off the north-west coast of Scotland. One boat-load left the ship against the master's orders, while he, with twenty of the crew who stood by him and worked well and loyally, brought the vessel safely into Stornoway.

In spite of all counter-measures, the toll of British merchant shipping taken by the submarines continued to be very serious, although the monthly figures were much lower in 1918 than in 1917. The average number of ships sunk each month from February to December 1917, inclusive, was 92, while the corresponding average from January to October 1918 was reduced to 52. The greatest amount of tonnage sunk in any month in 1918 was 224,501 in February, but even in September it was still 136,859; while the September toll of lives, 521 (civilian passengers and crews), was exceeded only five times during the whole war.

On January 1st the *Genesee* (2,892 tons) was torpedoed in the North Sea, but righted herself after listing heavily to port. Her master sent the majority of the crew away to the escorting patrol boat, and with the four who remained, one of whom was a sixteen-year-old apprentice, brought the ship safely into Hartlepool. The same day the *Fleswick* (648 tons) exchanged fourteen rounds with a submarine at a distance of two miles, and the master, Mr. J. Hughan, thought he scored one hit. On the 2nd the *Kingsley* (633 tons) was attacked by a submarine at only 300 yards' distance, and fired six rounds in reply. Five of her crew were killed by shrapnel, and four wounded; but her master, Mr. E. Evans, succeeded in bringing her safely to Penzance. He was awarded the D.S.O., and the chief engineer the D.S.C.

The *War Song* (2,535 tons) was sunk by gunfire on the 15th about twenty-five miles off Brest; sixteen of her crew were drowned, including the master. The next day the *War Thistle* (5,166 tons) was torpedoed, and towed into Havre Roads in a greatly damaged condition.

On the 23rd Mr. R. W. Briscoe, master of the *Nembe*

(3,855 tons), was chased for five hours with great persistence by a submarine, which was sighted at intervals in the rather misty weather; but by frequent changes of course he succeeded in outwitting the enemy completely. The *Nembe* made better speed than the submarine, and the latter could not use its gun in the teeth of wind and sea so long as Captain Briscoe kept it on his lee side.

The master of the *Saint Clair* (621 tons) attributed the escape of his ship from an attack by gunfire largely to the use of smoke boxes. About forty rounds were fired by the submarine, the *Saint Clair's* gunlayer being killed by a shell splinter.

The *Corton* (3,405 tons) was torpedoed on the 22nd, and the master and crew took to the boats; but finding that the vessel did not sink, the master called for volunteers, and returned on board with them. The wounded were transferred to a trawler, and when other help arrived the ship was towed into Stokes Bay. The experience of the *Harmonides* (3,521 tons) on the 20th was somewhat similar. She had been torpedoed, and the crew were in the boats, when the master found that only No. 1 hold was full of water, though the rudder was destroyed and the propeller was only partly submerged. The starboard boat had left the ship, and its crew were picked up later by a destroyer, but the crew of the port lifeboat returned immediately, and assisted the master until tugs came and took the ship in tow.

The *Alice M. Craig* (916 tons; master, Mr. W. Black) sighted the wake of a torpedo about 100 yards distant, and by a quick turn of the helm evaded it. She then fired five rounds at the submarine with her 90 mm. gun, two of which were thought to hit their mark.

On the 31st, Mr. J. W. Carter, master of the *Eggesford*, had his third experience of being torpedoed. As no escort was in sight, and the ship had taken a heavy list, he and the crew stood by in the boats to see what would occur. They afterwards returned on board, and in spite of some trouble with the firemen, brought the ship into Alexandria under her own steam.

On February 4th the *Herefordshire* (7,198 tons) and the *Sardinia* (6,580 tons) formed part of a convoy homeward bound in the Mediterranean. Twice on that evening a torpedo was sighted approaching the *Herefordshire*, and



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A GERMAN SUBMARINE STOPS A SAILING SHIP.

both times was avoided by quick action. The master, Mr. G. E. Millsom, used both helm and engines to throw his ship round quickly. Unhappily the first of the two torpedoes, after passing close under the *Herefordshire's* stern, struck the *Sardinia* on the starboard bow. The master, Mr. F. G. Cadiz, transferred his passengers and most of his crew to an attendant warship, and with about forty officers and men succeeded in navigating his ship, stern foremost, sixty miles to Oran, the nearest port. The forepeak and forehold were full of water, and at any moment the bulkhead between them and the after-part were liable to go, in which case she would have sunk immediately. There was also imminent risk in the darkness of further submarine attack. Captain Cadiz received the D.S.C.

The same day the *Treveal* (4,160 tons) was torpedoed and sunk with a loss of thirty-three lives, including the master. The submarine cruised about in the neighbourhood of three survivors clinging to a broken raft, but made no attempt to rescue them. They were picked up eight hours later in a state of great exhaustion.

The *Tuscania* (14,348 tons) was carrying troops and general cargo from Halifax to Liverpool. On February 5th she was torpedoed, and sank about two hours afterwards. The loss of life was heavy, forty-four of the crew and about a hundred soldiers, but might have been less if the boats had stayed near the ship instead of trying to make land. The master, Mr. P. A. McLean, considered that in narrow waters on a dark night a vessel like the *Tuscania*, capable of making sixteen knots, would be safer proceeding independently than in convoy.

Quite often the time that elapsed between the torpedoing of a vessel and its sinking was terribly short. The *Lofoten* (942 tons), which was lost on February 3rd, went down in less than sixty seconds, taking crew and boats down with her. The master and three others came up again, and climbed on to an up-turned boat, on which they clung for nine hours before they were rescued. They were the only survivors out of twenty-one.

The *Ventmoor* (3,456 tons), the *Beacon Light* (2,768 tons), the *Barrowmore* (3,832 tons), the *Huntsmoor* (4,957 tons), the *Rio Verde* (4,025 tons), the *Cheviot Range* (3,691 tons), and the *Renfrew* (3,830 tons) were all sunk during February with a loss of twenty or more lives in each case.

The *Philadelphian* (5,165 tons) was struck by two torpedoes simultaneously, one before and one abaft the bridge, and capsized and sank in seven minutes. The master, Mr. F. Wood, shared his lifebuoy with the cook, and swam for the nearest boat just as the ship went down. The gun's crew fought their gun until it was level with the water, and several depth charges were got away from the port howitzer before it was submerged. Out of a complement of 120 only four lives were lost, but unhappily three of the devoted gunners were among them.

Mr. J. Maddrell, master of the *Benedict* (3,378 tons), was faced with a difficult choice on the 27th. Astern a submarine was firing at him; immediately ahead was believed to be a minefield. His gun outranged the submarine's, and he risked the minefield rather than let the enemy come within close range of him. The ship came safely through to Cardigan Bay.

The *Glenamoy* (7,269 tons), the *Ravenshoe* (3,592 tons), the *General Church* (6,600 tons), the *Cimbrier* (3,905 tons), the *Antenor* (5,319 tons), the *Lackawanna* (4,125 tons), the *Pikepool* (3,683 tons), the *Athenic* (4,078 tons), the *Kerman* (4,397 tons), and the *Marconi* (7,402 tons) all reached port successfully during this bad month after having been torpedoed.

While February was the worst month in 1918 reckoned by the amount of tonnage sunk, as well as by the loss of life, March exceeded it in the actual number of vessels which the submarines destroyed.

The torpedoing of the *Penvearn* (3,710 tons), the *Kenmare* (1,330 tons), and the *Romeo* (1,730 tons) on the first three days of the month, of the *Clan Macdougall* (4,710 tons) and the *South Western* (674 tons) on the 15th and 16th, of the *Yochow* (2,127 tons) on the 20th, the *Trinidad* (2,592 tons) on the 22nd, and the *Lady Cory-Wright* (2,516 tons) and the *T. R. Thompson* (3,538 tons) on the 26th and 29th, were all accompanied by heavy loss of life.

Among encounters of outstanding interest was that of the *Comrie Castle* (5,173 tons) on the 14th in the English Channel (master, Mr. G. Owens). The submarine in this case was disguised as a drifter, with a funnel and a sail set aft, and was showing a red light. She sounded a blast on her whistle, and the *Comrie Castle* cleared her by about thirty feet. Immediately afterwards the *Comrie Castle*

was torpedoed, and the "drifter" disappeared. The ship was towed next morning in a sinking condition into St. Helen's Roads, and beached.

Great efforts were made to save the *Etonian* (6,515 tons) which was torpedoed while in convoy on March 23rd. Mr. J. Gardner, her master, called for volunteers to return to the ship after she had been abandoned, and although her list had increased to thirty-five degrees the third engineer and the donkeyman courageously went down below and made a careful examination of the damage. She was towed for some distance, but eventually rolled over and sank in fifty fathoms.

On the 24th Mr. M. Harnden, master of the *Austrian* (3,127 tons), believed he sank a submarine with the second shot from the ship's gun, and was supported in this belief by the commodore of the convoy, who watched the incident.

April 1918 was the last month during the campaign in which the tonnage sunk exceeded 200,000. From that time onward the improvement was more marked, both in the number of vessels for which the submarines accounted and in their tonnage. The loss of life (passengers and crews) continued to be high until the end of June, but dropped in July and August to 202 and 217 respectively, rising again in September to the high figure of 521.

On April 7th the *Cadillac* (11,106 tons), an Anglo-American oil ship, was struck in No. 2 tank by a torpedo but remained afloat, and her master, Mr. J. A. Collie, with the help of the ship's engineers, brought her safely into Plymouth. The same day the *Eboe* (4,866 tons) was shelled by a submarine off the west coast of Africa for an hour and a quarter without being hit, and after using up her smoke boxes the crew burnt mattresses and awnings to make a smoke screen for the vessel. The *Eboe* had no gun, and the master, Mr. T. H. Beard, was prepared to drive her on to the beach rather than let her be sunk in the open sea. He escaped, however, without damage.

The *Tainui* (9,965 tons) was torpedoed on the 8th, and seemed about to sink immediately, going down thirty feet at her forward end. The passengers were transferred to a destroyer, but the master, Mr. R. A. Kelly, succeeded in navigating the ship 130 miles stern foremost, and bringing her to Falmouth. His feat was the more remarkable, as

the ship's compasses had been deranged by the explosion, and there was great difficulty in knowing the right course. He was splendidly backed up by his engineers and crew, who ran great risk by remaining on board at all.

The *Warwickshire* (8,012 tons) was badly damaged by a torpedo, which passed through her bows, on April 10th, but was also brought safely into port under her own steam. Mr. W. J. Sturgess, her master, mustered the crew on deck after the engines had been stopped, and called for volunteers to go below and stoke. A sentence in his report is well worth quoting. "All hands responded immediately, saying they were ready to do anything I ordered *provided I gave them a sporting chance to get away*. The sporting chance was promised, and the steamer was under way in a few minutes, and headed for Bizerta." The phrase is amazingly typical; again and again the winning of the war depended just upon that willingness to take big chances under trusted leadership.

On the same day the *Burutu* (3,902 tons) was narrowly missed by a torpedo, discharged at her from close quarters, and about ten minutes later was attacked at 3,000 yards by gunfire. The submarine remained broadside on, firing all four of her guns, till the distance was increased to 6,000 or 7,000 yards, when she turned and chased the ship till dusk, still firing one gun, and trying to edge the *Burutu* nearer to the land. The ship was hit twice, one man being killed and three wounded, and had a heavy list to starboard, but during the night the master, Mr. H. A. Yardley, gave the submarine the slip, and later on reached Sierra Leone.

The heaviest loss of life in April in any one disaster was fifty-nine, through the sinking of the *Kut Sang* (4,895 tons) on the 29th, while the torpedoing of the *Pomeranian* (4,241 tons) on the 15th involved a loss of fifty-five, there being only one survivor. He had gone down with the ship, and on coming up again caught hold of the rigging just below the crow's nest. His joy when he found the vessel was already on the bottom can be imagined, and two and a half hours later he was rescued by a passing vessel.

On May 18th the *Esperanza de Larrinaga* (4,981 tons), when nearing the Irish coast after crossing the Atlantic from Norfolk, Va, was torpedoed, and commenced at once

to settle down. She did not, however, sink, and when a tug arrived, the master, Mr. T. H. S. Newton, with several volunteers returned on board. The chief engineer, Mr. H. E. Westthorpe, went below and restarted the engines, and with four firemen kept them going for six hours to assist the tug. The danger involved in this was immensely increased by a steady leakage of oil into the engine-room from a damaged tank. Captain Newton reported afterwards, "It is entirely due to the chief's efforts that we got the vessel in, as he worked his engines whilst waist-deep in water and oil. Firemen also fired until stokehold plates were washed away." Mr. Westthorpe himself described the position after steaming thirty miles: "The stokehold bulkhead began to bulge, and with the threatening danger of fire we were forced to abandon the engine-room, leaving the engines and pump running, having control only from the boiler tops. The oil, on reaching the fires, smoked badly, but did not ignite, and eventually smothered the fires, and up to the time of the salvage pump being put aboard, had arisen to ten feet in the engine-room." The whole incident is an excellent illustration of the risks which day after day were being run by unknown heroes of the Merchant Service in simple devotion to their duty.

On the 14th the *Highland Watch* (6,031 tons) opened fire with her howitzer upon a submarine, and with the third round scored a hit. The master, Mr. G. A. Powell, could not tell the extent of the damage done, but saw no more of the enemy.

On the 18th the *Media* (5,437 tons) was torpedoed in the Mediterranean, and in spite of trouble with the foreign crew, who rushed the boats, and left Mr. W. Robertson, the master, with only a dozen men to help him, he managed to bring the ship a distance of over fifty miles to port.

Late on the 26th, just before midnight, the quick eyes of Apprentice Frost twice sighted a submarine as it was nearing the moon's track, and enabled Mr. W. W. Stewart, master of the *Valacia*, to give prompt warning of the enemy's presence and position to the convoy's escort. Destroyers hastened to the spot, and dropped nine depth charges, which exploded with such force that troops on board the *Valacia* came on deck, under the

impression the ship had been torpedoed. It is unlikely that this submarine survived.

The *Rathlin Head* (7,378 tons), struck by two torpedoes, was nevertheless brought safely to Berehaven the next day by her master, Mr. W. J. Campbell. Several depth charges were fired from her howitzers, in a circle round the ship, and helped to keep the submarine at a respectful distance.

On the 30th the *Ausonia* (8,153 tons) was torpedoed 600 miles from land, and afterwards sunk by gunfire, many of the submarine's shots falling dangerously near the boats. For eight days and nine nights Captain R. Capper and his crew, including one stewardess, were exposed to the storms of the Atlantic and rationed to a few spoonfuls of water and a biscuit and a half each meal. Two boats carrying thirty-six people were missing when the others were picked up, and eight men had been killed on board the ship.

June 1918 saw a very substantial reduction in the number of ships sunk by submarines, which for the first time for sixteen months was under fifty, and also in the tonnage which these vessels represented. The loss of life would have been correspondingly reduced but for the sinking of the hospital ship, *Llandoverry Castle*, on the 27th.¹

On the 2nd Mr. T. M. Taylor, master of the *Orduna* (15,489 tons), tried to ram a submarine which had been sighted on his starboard bow, and missed it by six feet. It was sunk almost immediately afterwards by a good shot from the ship's gun. By heading directly for the submarine when it was sighted, instead of turning from it, he prevented its commander from firing a torpedo.

The *Vandalia* (7,333 tons) was torpedoed while leading the second column of a convoy on the 9th, and had to be abandoned. American destroyers formed the escort, and picked up the crew, except the master, Mr. J. A. Wolfe, and five men who were still with him in the vessel. As the master's boat was carried away, the destroyer O'BRIEN came alongside in spite of the heavy sea, and Captain Wolfe and the others jumped aboard her just before the ship went down.

The *Atlantian* (9,399 tons) was torpedoed at 10.30 p.m. on the 25th, and immediately began to settle down. She

¹ See p. 332, *et seq.*

happened to be the only vessel in her convoy which carried a howitzer for firing depth charges; so Mr. J. Gardner, her master, had charges fired in a circle round the ship, and this undoubtedly prevented the submarine from pursuing the remainder of the convoy. About half an hour later a second torpedo struck the vessel, and she sank in two minutes. The commander and crew of the submarine were in an exceedingly nervous condition as a result of the depth charges, when they came to the surface to interrogate the boats.

Apart from the *Llandovery Castle*, the heaviest loss of life in June was in the *Montebello* (4,324 tons), torpedoed on the 21st, whose master and forty of the crew were drowned.

The *Antiope* (3,004 tons), the *Cento* (3,708 tons), the *Strombus* (6,163 tons), the *Cairnmona* (4,666 tons), the *Kandy* (4,921 tons) the *Raranga* (10,040 tons), and the *Wilton* (4,281 tons) all reached port during the month after having been torpedoed.

Strenuous efforts were made by the master, Mr. W. E. Downing, and the crew of the *Origen* (3,545 tons), to save their ship, which was torpedoed on the 30th, but although they were ably assisted by a naval working party from their escort, the damage proved to be too great.

The month of July 1918 marked a great step forward in improved conditions. Only thirty-seven ships were sunk, and 202 lives lost, much the lowest figures since the beginning of the previous year. The experience gained in the protection of convoys, the more frequent use of depth charges, and the improved armament of merchant vessels, as well as the skill attained by the merchant officers themselves in evading and outwitting their insidious enemies, had by this time combined to weaken very greatly the menace of the intensive submarine campaign.

The *Branksome Hall* (4,262 tons), which had been twice torpedoed during 1917, and both times had been brought into port, met her doom and was sunk, fortunately without loss of life, on July 14th. The *Ben Lomond* (2,814 tons), the *Southborough* (3,709 tons), the *Kosseir* (1,855 tons), and the *Mongolian* (4,892 tons) were the only vessels sunk this month with the loss of more than twenty lives.

The White Star liner *Justicia* (32,234 tons), of which

Commr. H. F. David was master, was sunk on July 20th after a twenty-four hours' fight for life. The first torpedo struck her at 2 p.m. on the 19th, and ten more were fired at her before she sank. Four of these were exploded on their way towards the ship by good shots from the gun. Several submarines, possibly as many as six, took part in the attack, and one at least was sunk by a destroyer.

On the 24th the *Defender* (8,520 tons) was torpedoed about eighty miles from Queenstown, but Mr. H. Bickerstaff, her master, brought her safely in under her own steam, the engine-room hands all going below again willingly as soon as he decided it was possible to save her. The *Baron Napier* (4,943 tons) was attacked by gunfire on the 26th, some thirty rounds being fired at her at distances from 5,000 to 9,000 yards. The submarine submerged hastily after being twice hit by the ship's gun. The master, Mr. D. Reid, received the D.S.C.

In the early morning of August 3rd, the ambulance transport *Warilda* (master, Mr. James Sim) was attacked by a submarine between Havre and Southampton.

The *Warilda* was on her course of N. 10° E., steaming at a speed of 14½ knots, when at 1.30 a.m. Mr. F. C. Dunn, the second officer, sighted a submarine two points on the starboard bow. The enemy vessel was at a distance of about 100 yards: she was on the surface showing the conning-tower and the deck fore and aft. Mr. Dunn immediately realised the peril in which the *Warilda* stood. He ordered, "Hard-a-port—ram," and also instructed the usual signal to be made. It proved impossible to ram the submarine, so he telegraphed to the engine-room "hard-a-starboard," with the intention of bringing the submarine astern. An instant later, and before the signal for help could be sent, the look-out saw the track of an approaching torpedo. The *Warilda* was a vessel of 7,713 gross tons; she belonged to the Adelaide Steamship Company of Adelaide, South Australia, and mounted one 4-inch quick-firing gun. The weather was fine although the sky was dark and cloudy, and the sea was smooth, the wind being in the south-west and the visibility about three-quarters of a mile. The ship was showing no lights and was accompanied by two patrol vessels (P.39 and P.45). She had on board no fewer than 614 patients and seventy R.A.M.C. staff, in addition to a crew of 117. The torpedo struck

the ship between the engine-room and No. 4 hold, both the engine-room and the hold being flooded almost instantaneously, and the engineers and their staff killed. A circumstance which added further horror to the disaster was that this hold was being utilised on this voyage as a ward, and 101 patients were killed by the explosion. Captain Sim had observed the precaution of having all the watertight doors closed, otherwise the vessel might well have sunk within a few minutes.

Captain Sim had gone to the chart-room about a quarter-past one to have a smoke.

"I had been sitting there some little time when I heard the order 'hard-a-starboard' given. I came up on deck and asked the second officer what was the matter, as I could not see anything. He replied: 'A German submarine on the starboard bow.' I looked on the starboard side, and saw the track of a torpedo coming towards us. We rang the telegraphs 'Stop' as soon as it struck the ship, but it was never answered, so I think those in the engine-room must have been killed. We then got all the boats lowered down to the promenade deck and started getting the wounded into them. Although the engine-room was under water, the engines were still going, so we hung on for a long time, expecting that she would run the way off. Someone went aft to find out whether we were sinking, and the chief engineer returned to say that the ship had gone down so far, but did not seem to be going down any more. We continued to hang on for awhile, and by and by she began to lose her way, and we lowered the boats. She had then been going for fully an hour. Two destroyers then came alongside, and we put the rest of the people on board them. One of them went round and took up the boats that had left the ship. The commander of the P. 39—I believe it was—asked me if I thought she was sinking, so the chief engineer went aft again to have a look, and came back and told us that the after bollards were below water, and that she was likely to sink. The commander of the P-boat then said that, if we would put a line over the bow, he would hold on to her for awhile, in case there were a chance of her floating. The chief engineer, the second officer, the third officer, two signalmen, and myself—all that remained on board—then got aboard the P-boat. We went forward

then, and got hold of this tow line, and we towed for about ten minutes. Then we found that she was going down very fast by the stern, so we let her go. About ten minutes after that she sank. She sank stern first, her stern touching the bottom of the channel, and she fell over on her starboard side."

The loss of life would have been far heavier but for the timely assistance which was rendered by the escorting vessels and other craft which came on the scene in answer to signals for assistance. The total number of casualties on board the *Warilda* amounted to 113 patients and seven of the crew, all of whom were either killed by the explosion or drowned. The utmost coolness and courage were shown by the master, officers, and crew of the *Warilda*, the officers and crew of the rescuing patrol boats, the medical staff, and the large number of wounded men.

Among other encounters during August was that of the *Waipara* (6,994 tons), which was torpedoed on the 4th. When this vessel was struck, the greater part of the crew were transferred to an escorting P-boat. Among them were a number of cadets, one of whom (Haigh) was killed instantly. As soon as the master, Mr. W. R. Steadman, realised that his ship might be saved, he called for volunteers to return from the P-boat; seven of the cadets responded and greatly assisted him in bringing the ship safely to Netley.

The *Highland Harris* (6,032 tons) was less fortunate. She was torpedoed on the 6th, and her master, Mr. W. H. Robinson, decided to stand by in hope of assistance coming. A second torpedo, however, sent her to the bottom. The submarine commander, a young man, was unusually courteous in his subsequent treatment of the master.

The *City of Adelaide* (8,389 tons) left Port Said on the 7th, but owing to a bad outbreak of influenza among her firemen was unable to keep up with the convoy, and her master, Mr. J. W. Haughton, tried instead to take her into Malta. On the 11th she was struck by two torpedoes almost simultaneously, and sank within fifteen minutes. The sloop ASPHODEL arrived and picked up the crew, the submarine being still in sight about seven miles away.



A CONVOY ZIG-ZAGGING IN THE DANGER ZONE.

[Copyright, Imperial War Museum.

The *Diomed* (7,523 tons) was on her maiden voyage from Liverpool, and was steaming at sixteen knots within 400 miles of New York on the 21st when she encountered a large submarine armed with two 6-inch guns. After firing twelve rounds the *Diomed's* gun was put out of action, and another lucky shot from the submarine disabled her steering-gear, after which she had to be abandoned. The submarine then came up close, and sank her. Two men were killed, and three others wounded. The submarine commander offered medical assistance, but as the *Diomed* had her own surgeon available the master, Mr. A. D. Baker, declined help.

The *Flavia* (9,291 tons), from Montreal, was sunk on the 24th when approaching Tory Island. There was some doubt as to whether the two explosions which followed in quick succession were due to torpedoes or to bridled mines. Mr. E. T. Fear, the master, inclined to think the latter.

On the last day of August Captain W. H. Smith, who had spent nearly the whole of the war years in the North Atlantic, and had delivered safely close upon 300,000 tons of cargo in the United Kingdom without previous disaster, was in command of the *Milwaukee* (7,323 tons) when she was torpedoed twice, the second explosion cutting the ship almost in two. Between the firing of the first and second torpedo the track of the submarine was visible less than 200 yards away, and if the *Milwaukee* had been fitted with a howitzer for firing depth charges she could almost certainly have sunk it. Captain Smith reported of the submarine commander afterwards, "He was fairly decent; asked if we had biscuits and water and gave us a bucket to bale the boat." It would seem that in these last months of the war there was a distinct improvement in enemy behaviour and humanity.

September was a bad month again for loss of life, 143 going down with the *Galway Castle* (7,988 tons) upon the 12th. Another heavy loss of life occurred on the 9th, at the sinking of the *Missanabie* (12,469 tons; master, Mr. W. P. Hains) when a sudden lurch of the ship dislodged a funnel; this fell overboard among the boats, and increased the number of deaths to forty-five.

Fine seamanship on the part of Captain W. J. Simmons was the means of bringing the *Actor* (6,082 tons) safely

into Milford Haven, after being torpedoed in the bows. Her propeller was partly out of water, and again and again the ship had to be brought right round in a circle in order to regain her course. The *Persic* (12,042 tons; master, Mr. H. Harvey) also reached port safely after having been torpedoed.

On the 13th the *Newby Hall* (4,391 tons; master, Mr. F. O. Seaborne) was missed by a torpedo, and then attacked by gunfire. The ship's gunners scored three hits, disabling the submarine's forward gun, and eventually forcing her to give up the pursuit.

A disaster of appalling suddenness occurred when the *Serula* (1,388 tons) was torpedoed on the 16th off the south-west coast of Wales. The second officer, one of the few survivors, said, "She just gave a shudder, and sank like a stone, stern first." The master and sixteen of the crew were drowned. Again the submarine commander did what he could afterwards to ameliorate the situation, taking the survivors on board the submarine and conveying them to a raft some distance off, on which he placed them to await assistance. The *Barrister* (4,952 tons), which also went down very quickly off the Isle of Man—only three minutes elapsing after she was struck—did not experience similar consideration. Thirty of her crew were drowned, the submarine commander ignoring a request for help which the master, Mr. Lawrence Smith, addressed to him. Another heavy loss this month occurred on the 21st, when the *Polesley* (4,221 tons) was sunk, and the master and forty-two of the crew were drowned.

In October twenty-three ships only were destroyed, and two more in November. The heaviest loss during these last weeks was the *Leinster* (2,646 tons), which was sunk on October 10th with the appalling sacrifice of 176 lives, including the master. Another was the *Arca* (4,839 tons), torpedoed on the 2nd, with a loss of fifty-two, one of whom was again the master.

Attacks were made unsuccessfully on eighteen merchant vessels in October, and on two during the first week in November; in most cases the approach of the torpedo was sighted in time to enable the helm to be put over and disaster averted.

CHAPTER XI

THE SINKING OF HOSPITAL SHIPS

THE German attacks on hospital ships constituted the most barbarous feature of the war by sea. As in the case of ordinary merchant vessels, the lives of the seamen were wantonly imperilled without the slightest attempt to provide for their safety after their ships had been sunk under them; they were left to fare as best they might on unfriendly seas, often miles away from the nearest shore. Not only were men, wounded in action or suffering from sickness, many of them quite helpless and others mad with delirium, brought face to face with death, but the medical staffs and nurses, specially protected by the Red Cross, the emblem of the conscience of humanity, were murdered in cold blood. Throughout this dastardly campaign neither the seamen, the wounded men, the medical staffs, nor the nurses—women with highly wrought nervous systems—flinched from the ordeal. The story of this splendid contempt for danger deserves, above all other incidents of the war, to be set down as an illustration of the heroism in face of unparalleled perils which this struggle developed in the Anglo-Saxon race. The wounded, as well as the medical and nursing staffs, were under the charge of merchant seamen, and with fine chivalry was that responsibility fulfilled, with the result that the loss of life, though actually heavy, was relatively small.

Before the outbreak of war, nothing in International Law had been more clearly defined and safeguarded by written agreement than the status and sanctity of hospital ships. At The Hague Conference of 1899 a Convention (III) was drawn up and adopted, founded upon the principles promulgated at Geneva in 1864, by which hospital ships were to be respected even during actual engagements at sea, so far as this was possible. It was further laid down that they could neither be captured, nor could their nursing and

medical staff be made prisoners of war. To ensure this immunity, it was declared that hospital ships should be distinctly decorated, being painted white with a horizontal band about a metre and a half broad, either of red or green, such decoration to be so lit up at night as to be easily distinguishable. Furthermore, all hospital ships were to fly, in addition to their national flag, the white flag with the Red Cross upon it. No hospital ship was to be used for any belligerent purpose. The deliberate sinking of hospital ships was, therefore, entirely opposed to International Law, to say nothing of outraging the natural feelings of all civilised and humane nations, for these vessels carried women who had chivalrously devoted their trained abilities to the care of the sick and wounded, irrespective of nationality, class, or religion.

But that this was, nevertheless, to be the policy of the German Government was foreshadowed after a few months of war, when the British hospital ship *Asturias* was unsuccessfully attacked by a German submarine. That occurred on February 1st, 1915, and on the 25th of the same month the hospital ship *St. Andrew* was chased by a submarine off Boulogne. That these two attacks presaged a further development of hostile action against Red Cross ships became clear from rumours of German origin that soon gained currency, both in enemy and neutral countries, as to the alleged misuse by the British Government of their hospital ships.

On March 1st, 1915, the German Ambassador at Madrid sent a telegram to Berlin stating that "German ship captains, who were interned on the Isle of Wight, have declared that they observed heavily laden hospital ships sailing outwards; they expressed the suspicion that the ships are employed for transport purposes."¹ It was also stated that a Dutch subject had made a sworn declaration to the German Admiralty Staff that he was told by English sailors that the submarine blockade was useless because the British carried out the transport of troops and munitions by means of hospital ships. In view of the fact that British wounded as well as prisoners of war in Germany were maltreated, this was, he had been told by them, no breach of International Law. On April 16th, 1915, an official report was made by the German Naval Intelligence

¹ Annex to German Memorandum of January 28th, 1917 (Cd. 8692).

Officer at Wesel, on the alleged evidence of a German civilian prisoner returned from England, that he had been interned off the Isle of Wight and had observed British hospital ships sailing from Southampton and Portsmouth, particularly on Sundays, and that all the prisoners, as well as the crew of the ship in which he had been interned, had been convinced that the hospital ships were carrying troops and munitions. It was partly in view of these rumours and of others alleging similar abuse of the status of hospital ships plying to Gallipoli that the *Mauretania* was inspected at Naples in November, 1915, when the United States, Swiss, and Danish Consuls signed the following statement :—

“ We, the undersigned, hereby certify that at the request of the Commanding Officer of the ship, we have this day visited and inspected H.M. Hospital Ship *Mauretania* and are satisfied that there are no combatant troops or warlike stores in her, and that the rules of the Geneva Convention are being observed in every way. Signed on board H.M. Hospital Ship *Mauretania* this twenty-ninth day of November 1915.”

This emphatic neutral certificate had no effect on the enemy's declared intentions, and early in 1917 a memorandum was issued by the German Government which practically declared open war upon hospital ships. That matter is fully dealt with on a later page.

A few days before the inspection of the *Mauretania*, the first actual loss of a hospital ship had already occurred. On November 17th, 1915, the *Anglia* struck a German mine in the Channel off Folkestone and foundered. The *Anglia*, which was a twin-screw steel steamer of 1,862 tons, had been requisitioned from the London and North-Western Railway for use as a hospital ship, and was carrying sick and wounded soldiers at the time of sinking. It was about half an hour after noon that she struck the mine. The actual impact occurred on the port side under the bridge, and one of her three boats was too much damaged by the explosion to be of any use. She sank in somewhat less than an hour, and the difficulties of rescuing the passengers, many of them helpless, were increased by the very heavy list to port, which the mined vessel took almost at once and by the fact

that, owing to the confusion caused by the explosion, the orders given to stop the engines were either not heard or not carried out. This caused the *Anglia* to continue to make considerable way, thereby rendering the navigation of the torpedo boats and other vessels that soon came to the rescue extremely hazardous ; while later on, when she was sinking more rapidly by the head, the racing of her propellers, as her stern rose out of the water, added to the perils of those who were trying to escape by swimming.

In these circumstances, the very great daring and skill with which Lieutenant-Commander H. P. Boxer, of Torpedo boat No. 4, laid his vessel alongside the *Anglia* were deservedly commended. Lieutenant Boxer, it appeared, was in the wardroom of the torpedo boat when he heard the explosion, and by the time he had reached the bridge, the officer of the watch had already altered course towards the *Anglia*, steaming at full speed. The torpedo boat was then about one mile from the *Anglia*, which already had her head well down, although she was still making considerable way. Several men were struggling in the water astern of the vessel, from which the two undamaged boats had been lowered. Only the foremost of these succeeded in getting clear of the ship, the other drifting astern and being cut up by the racing port propeller. When within two hundred yards of the *Anglia*, Lieutenant Boxer stopped his vessel and lowered a lifeboat and raft before laying himself alongside. This difficult and perilous operation he accomplished at last, and, during the first period of contact, about 100 men succeeded in jumping from the hospital ship on to his upper deck. The ship was then carried away again by the sea, and Lieutenant Boxer had to manœuvre alongside a second time, when he took off a few more men ; some jumped directly on board, and others were hauled in with life-lines. Both vessels were at this time steaming alongside of each other at about six knots. With about 140 rescued men on board, Lieutenant Boxer, owing to the imminent danger of the *Anglia* sinking, had to back away to the stern of the vessel ; here he picked up two boat-loads of wounded and three survivors from a raft, and then proceeded at full speed to Dover. Other survivors were rescued by Lieutenant-Commander L. A. D. Sturdee, of the gunboat HAZARD, who had lowered and manned all his boats and

also sent a motor-boat to pick up more distant strugglers. Both these officers, together with Lieutenant-Commander E. H. B. L. Scrivener, of the destroyer URE, were expressly thanked for their assistance by the Army Council.

These vessels were not alone, however, responsible for the saving of life from the *Anglia*; and the utmost credit was due to the masters and men of the steamships *Langdon* and *Channel Queen*, and the small collier *Lusitania*. The *Langdon*, which was target towing at the time, slipped her targets and succeeded in saving two officers and twenty-three soldiers, most of whom were wounded. The *Lusitania*, which was bound from London to Lisbon, immediately on hearing the explosion and perceiving the *Anglia* to be in trouble, put off two boats which picked up many survivors. While these boats were on the way back, and just as they were again nearing their ship, another loud explosion occurred, and the *Lusitania* herself was seen to be sinking. It became necessary, therefore, for these two boats to rescue their own comrades from the collier, and they had hardly done so when the *Lusitania* turned turtle and sank. The *Channel Queen* (master, Mr. E. W. Wetherall), a coasting vessel of 327 tons with a crew of twelve, was steaming at about ten knots when she saw the *Anglia* in difficulty, some three miles away. She immediately headed towards the doomed ship, approached within a quarter of a mile of her, lowered her lifeboat, and rescued seven men. The *Channel Queen* herself had an extremely narrow escape from a floating mine.

That the services of these three vessels of the mercantile marine were highly appreciated was evidenced by the letter sent from the Lords Commissioners of the Admiralty to the owners, expressing their appreciation of the gallant and valuable assistance rendered by the masters and crews to the survivors of the *Anglia*. With regard to the hospital ship herself, while the Court of Inquiry directed some criticism towards the fact that her engines were not stopped, the general behaviour, discipline, and courage of her captain and crew were commended.

Ten of the R.A.M.C. staff, 133 patients, and 25 of the crew of the *Anglia* lost their lives.

There is no evidence to show that the mine on which the *Anglia* struck was laid deliberately with the object of

sinking that vessel; nor can blame be attributed to the Germans for the sinking of the British hospital ship *Galeka* nearly a year later.¹

The loss of the *Galeka* (6,772 tons) with nineteen lives on October 28th, 1916, afforded a tragic illustration of the defects in the system then existing for the examination and protection of vessels calling at the port of Havre. The previous day the *Galeka*, a Union Castle liner, crossed the Channel from Southampton in a rough sea, having on board sixty-one R.A.M.C. officers and men and a crew numbering in all 117. Just after seven o'clock in the evening she arrived off Havre at a point about one mile from the whistle buoy. There she sighted the examination boat stationed outside the net barrage. It was part of the duty of the examination boat to show incoming vessels the gateway through the barrage, and the *Galeka's* acting-master (Mr. J. Watson Black) lost no time in signalling to her. Getting no response, the acting-master, as he stated in his evidence at the inquiry subsequently held, turned his ship round and stood north with engines dead slow. Throughout the night the *Galeka* cruised thus in the neighbourhood, returning at intervals to within a mile or so of the whistle buoy to get into communication with the examination vessel, but, though the latter twice threw her searchlights on the hospital ship and it is thought made one attempt to hail her, the *Galeka* otherwise received no answering signal. The peril of thus cruising in the dark was great. A minefield had been laid by the enemy near the whistle buoy and had been imperfectly swept by the few minesweepers available for that duty. It was obvious that in waters where the currents are very strong and variable a vessel waiting about for hours to enter the barrage ran a very grave risk of encountering a drifting mine.

That was the fate which actually befell the *Galeka*. At daybreak Captain Black was about six miles from the buoy, having Cape La Hève light about five miles to the south-east, when, about 6.15, a terrific explosion occurred forward, throwing a mass of debris as high as the foremast head and killing outright nineteen R.A.M.C. orderlies. Engines were immediately stopped and the

¹ The Russian hospital ships *Portugaland* and *Vpered* were torpedoed and sunk by submarines in the Black Sea on March 30th and July 8th respectively.

boats were lowered to the promenade deck. The explosion brought the examination steamer alongside and in response to the *Galeka's* hail she made the signal "follow me." No. 1 compartment was by this time flooded, but No. 2 was only slowly making water, and with increasing difficulty owing to the depression of her bow the *Galeka* was able to follow her guide to a point about a mile inside the barrage. It had then become dangerous to steam farther, and the boats having been lowered to the water all the surviving passengers and the bulk of the crew were embarked, being picked up and landed by a number of rescuing tugs and drifters which speedily reached the spot. Captain Black and the chief officer with several members of the crew remained on board for about two hours after the explosion, being taken off by a boat from the examination vessel. The doomed ship, her bows submerged and her propellers out of the water, drifted with the tide and wind till she grounded on the shore to the north of Cape La Hève. The acting-master's testimony to the excellent behaviour of all on board was fully upheld by the senior medical officer in charge of the R.A.M.C. units.

That the inadequacy of the arrangements made for the safeguarding of shipping at the port of Havre was largely responsible for the disaster the official inquiry made evident. It was clear that minesweepers at the service of the authorities were quite insufficient for their difficult task, and more particularly that the *Galeka* should have been passed through the barrage without the long delay that was actually incurred. On the other hand it was a matter of doubt how far the apparent failure in initiative on the part of the captain of the examination vessel might have been due to the absence of an English interpreter on board. The destruction of a fine ship and the sacrifice of a score of valuable lives were not, however, all loss, for, as a result of the official representations made, certain improvements were effected at the port. In communicating this fact to the Admiralty at the end of the year, Captain W. A. H. Kelly, R.N., the British liaison officer at Paris, added that the "delays in the examination service at Havre seem to have been overcome and interpreters have been provided."

As we have already stated, there are no grounds for

supposing that the loss of the *Anglia* and *Galeka* was due to offensive action on the part of the enemy. There appears, however, to be no doubt that the mines encountered by the hospital ships *Britannic* and *Braemar Castle* in the Mediterranean in the month following the loss of the *Galeka* were laid by an enemy submarine in the tracks of those vessels. On November 21st, 1916, the *Britannic* was on passage from Naples to Mudros, and met her fate at a point about four miles west of Port St. Nikolo in the Zea Channel, between the mainland of Greece and the Cyclades Islands.

She was the well-known White Star liner, which had been requisitioned since the outbreak of war as a hospital ship. She was the largest, as well as one of the most recent and elaborately fitted of the liners under the British flag; launched in 1914, her estimated value was two million pounds, and her tonnage 48,158.

It was at 8.12 in the morning that the explosion occurred on the starboard side forward, near the bulkhead between Nos. 2 and 3 holds, breaking the bulkhead and filling both the holds. The bulkhead between holds No. 1 and No. 2 was probably broken by the same explosion, No. 1 hold filling with water. The stokeholds Nos. 5 and 6 were also flooded; and, though the officer-in-command (Captain C. A. Bartlett, R.N.R.), with seamanlike resource, at once turned the ship's head towards the Zea Channel in an endeavour to beach her, this was found to be impossible.

Fortunately, at the time of the explosion the weather was fine and the sea smooth. Fortunately, also, the *Britannic*, being on her way to her port of embarkation, had no wounded or sick persons actually on board. She was carrying, however, a large medical staff, including 22 surgeons, 77 nurses, 290 orderlies, with three chaplains, besides a ship's company of 673. All the necessary regulations as regards the distinguishing marks prescribed by the Geneva Convention had been strictly adhered to, a gigantic Red Cross having been painted on each side, so large that when illuminated at night there were no fewer than 300 powerful electric lights in each separate arm of the cross. When the explosion occurred, the ship, which was travelling at a speed of twenty knots, immediately fell off three points in her course. Emergency quarters were sounded, the engines stopped, water-tight doors closed, and S.O.S. wireless signals dispatched. At first,

Captain Bartlett's impression was that the vessel, though seriously damaged, could be saved. He, therefore, gave orders to clear away all the boats, while, as we have said, he headed her towards Zea, in an endeavour to make land. The steering-gear, however, soon failed, and owing to the rapid filling of the forward holds and boiler rooms navigation became impossible. The engines again stopped and all the boats were ordered out, but were directed to stand near the ship. It was now clear that the *Britannic* could not last very long; she was already, indeed, beginning to sink rapidly. When all was clear, Captain Bartlett himself walked off his ship into the water, to be picked up half an hour afterwards by a motor-boat.

When rescued, Captain Bartlett was told that some boats had fouled the propeller on the port side and that a number of men had been thrown into the water and injured, the two motor-boats having rescued them. After a thorough and careful examination of the whole neighbourhood, Captain Bartlett ordered both motor-boats to proceed to Port St. Nikolo with the injured. There they were given every possible attention, the arrangements for their care being superintended by the French Consul.

Throughout this incident, the courage and discipline of everybody on board were beyond praise. The nurses lined up on deck and went to their various stations with calm self-control. They had an admirable example in their matron, Miss E. A. Dowse, who had joined the Army Nursing Service in 1886, and had endured the perils and privations of the siege of Ladysmith. Almost at once, indeed, the services of the nurses were required, since many members of the crew and R.A.M.C. Staff had been injured by the explosion, and others had been hurt by the propellers when the three boats had been destroyed. In the emergency, these women revealed courage, resource, and devotion, maintaining the high traditions of their service. The whole situation was handled with admirable coolness and presence of mind by Captain Bartlett. To this officer the Mercantile Marine Service Association, writing afterwards to the Secretary of the Admiralty, paid the following well-deserved tribute:

"In the opinion of my Council, which is comprised of Ship Masters and Officers, Captain Bartlett displayed the

highest qualities of a seaman, and it was due to his skilful organisation and foresight that so few of the large company on board lost their lives. Captain Bartlett was the last man to leave the ship, jumping into the water and gallantly refusing assistance until he was sure that there was room in the boats for all survivors."

Rescue work was efficiently performed by His Majesty's ships *HEROIC*, *SCOURGE*, and *FOXHOUND*, and a French tug, which had been sent to the relief of the sinking vessel.

At 9 a.m., after an interval of less than an hour, the *Britannic* finally sank in some sixty-five fathoms of water. Altogether twenty-one members of the crew were lost, either as the result of the explosion or by drowning, twenty others being wounded. Of the R.A.M.C. complement, one officer was lost with eight other ranks; while one officer and twenty-four other ranks were wounded.

With regard to the agency by which the *Britannic* met her end there was at first some doubt. At the subsequent inquiry three witnesses testified to having seen a periscope and the wake of a torpedo, but there was little to corroborate their impression. Consideration of all the testimony of survivors, in conjunction with other evidence received by the Admiralty, led to the definite conclusion that this hospital ship was sunk by a mine laid by a submarine in her track. Two mines were afterwards dragged and destroyed in the Zea Channel.

Two days later—November 23rd—in the same locality, the hospital ship *Braemar Castle* (6,318 tons) was struck by a mine, in the Mykoni Channel, while bound from Salonica to Malta. This mine, there is good reason to believe, had been laid only an hour before the disaster, probably by the same enemy submarine (U73) which was held to have been instrumental in destroying the *Britannic*. Coming straight down through the Skopelos Channel at 11·7 knots, the *Braemar Castle* had passed Livada Point, about a mile to the east, and rounded the island of Tinos, also at a distance of about a mile. All went well until she had passed Joannis Point, when, at about 11.15 a.m., a violent explosion occurred under the port side of the bridge. The master, who was thrown into the air by the violence of the concussion, immediately ordered the engines to be stopped and all boats to be cleared away. As soon as sufficient

way had been taken off the vessel, the boats were lowered and filled, and a French trawler, the *Marie Rose*, came alongside and embarked the remainder of the patients. Of these the total number was 376, the hospital staff consisting of 58 persons, and the crew of 130. Fortunately only four lives were lost. Three bodies were found in No. 3 hold, where the explosion had occurred, and two members of the crew were injured by the explosion. The ship having been cleared, the captain proceeded at half-speed to beach her at the nearest safe spot. The *Braemar Castle* was by that time down by the head and making heavy water forward. She took the ground very gently, and both bower anchors were laid out. All available pumps were started, and a stream anchor laid upon the port quarter.

In this case also there was, at first, some doubt as to whether the *Braemar Castle* had been mined or torpedoed. Mines had been suspected in the Mykoni Channel, and it was afterwards found by the Court of Inquiry that certain Admiralty directions had been misunderstood by the master. The quartermaster, in giving evidence, stated that he had seen a periscope, and his impressions as to the cause of the loss were shared by one of the nurses as well as by Lieutenant-Commander H. H. Tatham, of H.M.S. *HONEYSUCKLE*, which was in the neighbourhood at the time. The bulk of evidence, however, as in the case of the *Britannic*, pointed to the *Braemar Castle* having been mined; and it was ascertained later, as has been stated, that U73 had laid mines in the track which she followed, but whether the submarine remained in the vicinity watching the effect of its dastardly work remained uncertain.

Perhaps the best testimony to the behaviour of those on board was contained in a letter from Lieutenant-Colonel J. C. B. Statham, R.A.M.C., to Lord Methuen, the Governor of Malta, dated December 4th, 1916, from Intarfa Hospital. All the patients, except those actually killed by the explosion, were speedily got into the ship's boats, the result being due, as Colonel Statham said, not only to the splendid handling of the ship by the commander and crew, but also to the efforts of the senior medical officer, Major W. S. Crosthwait, R.A.M.C., who had been in charge of the boat drill preparations, and whose

efforts had largely secured that, when the emergency actually occurred, there was no panic whatsoever. The patients were landed at Syra, the Greek and French hospitals being placed at their disposal as well as the French convent school.

Up to the end of 1916 every hospital ship destroyed or damaged had met its fate, so far as could be definitely determined, through striking a mine. From this time onwards to the end of the war, of ten vessels of this character which were damaged or sunk, all but three were certainly hit, not by mines, but by torpedoes fired by submarines. The contrast thus presented becomes the more suggestive in the light of the Berlin Declaration of January 28th, 1917, referred to on a previous page. The text of the memorandum issued by the German Government is as follows :

“For some time the enemy Governments, especially the British Government, have used their hospital ships not only for the purpose of rendering assistance to the wounded, sick, and shipwrecked, but also for military purposes, and have thereby violated The Hague Convention regarding the application of the Geneva Convention to maritime warfare.

“The fact that the British Government during the campaign on the Gallipoli Peninsula designated to the Governments of the Central Powers a disproportionately large number of ships as hospital ships, which could not possibly serve exclusively for the transport and care of the sick and wounded, already tended to arouse suspicion. In 1915 alone not less than fifty-nine ships were notified by them as hospital ships after forty ships had already been notified as hospital ships since the beginning of the war. After the victorious completion of the Gallipoli campaign, the Turkish Government informed neutral Powers in a note of protest that the English commanders had used the hospital ships in the Eastern part of the Mediterranean for the purpose of bringing back troops and military supplies.

“Furthermore, the British Government did not, as is the general custom, equip certain ships once and for all as hospital ships for use for the duration of the war, but often placed one and the same ship on the list of hospital

ships, and then again cancelled it from the list, so that the German Government was hardly able to convey to its naval forces in due time information to the required effect. The steamship *Copenhagen*, for instance, which was used by the British Government as a transport, was notified as a hospital ship in a note from the American Embassy at Berlin, dated October 14th, 1914; subsequently, on February 6th, 1915, she was notified as having been struck off the list; on January 1st, 1916, again added to the list; and on March 4th, 1916, again struck off the list. This procedure conveyed the impression that uncertainty and confusion were to be aroused regarding the character of the ships used for this purpose, which permitted the display of the peaceful or belligerent character of the ship according to requirements.

“Furthermore, in 1915 the German Government received numerous trustworthy reports that the English hospital ships in the Channel, which chiefly served the purpose of fetching the wounded of the British Army fighting on French and Belgian soil from French harbours and transporting them to English harbours, were conspicuously heavily laden on the journey from England to France, while on the return journey they had normal draught. This fact led various observers, especially sea captains, to conclude that the ships were being employed on the outward journey to France to transport munitions, and that the Red Cross emblem was being abused.

“This presumption was then confirmed by a quantity of unexceptionable testimony. English soldiers frankly admitted the use of hospital ships for such purposes. A French sergeant told a German prisoner that he had closely observed the loading of munitions from many automobiles into the hospital ship *La Franee* in the harbour of Marseilles. According to the affidavit of a trustworthy neutral, English sailors have stated that the transport of munitions to France was often effected by means of hospital ships on the part of the English. Finally, there are statements on oath from eye-witnesses who were present when munitions were being loaded on board hospital ships.

“The worst breach of the above-mentioned Hague Convention, however, is to be found in the fact that the British and French Governments have in numerous cases

effected the transport of their troops by means of hospital ships. Apart from the fact that superior officers appear to prefer travelling on hospital ships, a large number of trustworthy reports, including especially sworn statements relative to the transport of bodies of troops, are to hand. Evidently the transport of troops by means of hospital ships is a regular practice in the Channel. Besides this, it has on different occasions been ascertained that these ships are armed.

“The reports of trustworthy informants and witnesses, who are mentioned in the annexes, constitute only a small part of the material in the possession of the German Government. The names of several of these persons could not be mentioned, because they are either directly or indirectly within the reach of the enemy’s power, and would, therefore, be exposed to severe reprisals if their names were given. In any case, no doubt exists in the mind of the German Government that the enemy Governments have continually, and most seriously, violated by their action The Hague Convention regarding the application of the Geneva Convention to maritime warfare.

“In view of the breach of treaty committed by their enemies, the German Government would be entitled to free themselves altogether from the obligations contained in the Convention ; for reasons of humanity, however, they desire still to refrain from doing so. On the other hand, they can no longer permit the British Government to dispatch their troop and munition transports to the principal theatre of war under the hypocritical cloak of the Red Cross. They therefore declare that from this moment on they will no longer suffer any enemy hospital ship in the maritime zone which is situated between the lines of Flamborough Head to Terschelling on the one hand, and Ushant to Land’s End on the other. Should enemy hospital ships be encountered in this maritime zone, after an appropriate lapse of time, they will be considered as belligerent and will be attacked without further consideration. The German Government believe themselves all the more justified in adopting these measures as the route from Western and Southern France to the West of England still remains open for enemy hospital ships, and the transport of English wounded to their homes can

consequently be effected now as heretofore without hindrance."

This memorandum was accompanied by twenty-three annexes in support of the German allegations.

A further memorandum was issued on March 29th, 1917, professing to give additional evidence as to the misuse of hospital ships in the Mediterranean and threatening to close this sea also for the navigation of hospital ships subject to the following conditions :

1. Hospital ships must touch at the harbour of Kalamata in the Peloponnese and must proceed between Gibraltar and Kalamata at a fixed rate of speed, which must be notified beforehand to the German Government.

2. The names of the hospital ships, together with the times of their arrivals and departures at Kalamata and Gibraltar, must in each separate case be notified at least six weeks in advance.

3. For every journey a representative of the neutral Power protecting German interests in the country whose flag the ship flies, must furnish an explicit assurance that the hospital ship has on board only sick, wounded, and medical nursing staff and further that she is carrying no other cargo than materials for the relief of the sick and wounded."

To these allegations, the British Government made the following reply on October 5th, 1917 :

"The German memorandum of January 28th, 1917, made allegations of misuse of British and Allied hospital ships, and in twenty-three annexes furnished evidence, chiefly in the shape of reports of officers of the German Government and statements of witnesses, which, in the view of the German Government, proved or pointed to such misuse. A further memorandum, dated March 29th, 1917, repeated these allegations in general terms and quoted further declarations in support of them.

"In replying to the accusations brought forward by the German Government, His Majesty's Government desire, before all, to call attention to the remarkable fact that German submarines and other warships have never once exercised the right of inspecting British hospital ships, which is given to them by article 4 of The Hague Conven-

tion, for the application of the principles of the Geneva Convention to maritime warfare. So far as can be ascertained, they have only once stopped a British hospital ship long enough to examine her papers. This occurred on February 23rd, 1917, when the hospital ship *Dunluce Castle* was stopped by a German submarine in the Eastern Mediterranean; her papers were found to be in order and the vessel was allowed to proceed. It might have been expected that the German Government, seeing that they had reports in their possession, which they profess to regard as reliable, pointing to the misuse of British hospital ships, would not have completely neglected the obvious and well-recognised method of inspection for the purpose of verifying their suspicions. Instead, they have preferred to appeal for support to their charges to conjectural statements of persons who never had an opportunity of ascertaining whether there was any real foundation for their assumptions, and, on this flimsy basis, without making any attempt to discover the value of the hearsay evidence which they had collected or giving His Majesty's Government any opportunity of rebutting their allegations, they proceeded to the extreme step of ruthlessly attacking innocent hospital ships engaged in their humane task of serving the sick and wounded.

"His Majesty's Government have now made inquiry into the allegations contained in the German memoranda so far as they concern British hospital ships, and so far as the charges made are not in such vague terms as to preclude any possibility of investigating their foundation. Generally, the charges group themselves under four heads, viz. :

1. Alleged excessive number of hospital ships in relation to the Gallipoli campaign.
2. Changes in the list of hospital ships, with supposed intention to deceive.
3. Alleged transport of munitions.
4. Alleged transport of troops.

"As to (1), the number of hospital ships employed was not excessive, having regard to the number of invalids to be evacuated from Gallipoli. On the contrary, the accommodation on hospital ships proved to be inadequate to meet requirements, and it was necessary to employ ordinary transports, in addition, for the conveyance of

sick and wounded. These transports were, of course, not protected by The Hague Convention, did not fly the Red Cross flag, and were not fitted out as hospital ships.

“As to (2), no rule exists under which a hospital ship, once notified, must remain in hospital service for the duration of the war. It is perfectly true that certain ships were notified as hospital ships and later on were removed from the list. This was due to alterations in the requirements for various classes of tonnage, caused by the sinkings of ships by submarines and to changes in the military situation.

“There is no ground for the somewhat nebulous suggestion of the German Government that the aim of the changes was to produce uncertainty and confusion in regard to the character of the ships, and no evidence is adduced to show what military advantages could be gained by such confusion, which, in fact, would probably be disadvantageous rather than otherwise, since it would be injurious to the safety of the hospital ships themselves.

“As to (3) and (4), alleged conveyance of munitions and troops, to which nearly all the evidence relates, a detailed examination of the particular instances alleged is given below. It may, however, be stated at once that British hospital ships have never been used for the carriage of munitions of war or of combatant troops. Red Cross stores and personnel of the Royal Army Medical Corps (which are protected by the Geneva Convention) have been embarked, and it appears probable that the German Government have been misled by the fallacious deductions of their witnesses, who apparently were unable to verify their assumption that cases of Red Cross stores were really munitions of war and bodies of the Royal Army Medical Corps in khaki uniform detachments of combatant troops.

“The statement in the second German memorandum to the effect that, while His Majesty's Government had denied that British hospital ships had carried either troops or munitions, the British Admiralty had merely declared that no troops had been conveyed in such ships, without denying the carriage of munitions, is curiously devoid of point. Both in the statement issued by His Majesty's Government on February 1st, 1917, and in a note addressed to the United States Ambassador in London on January 31st, the allegations of the German Government were

contradicted in respect both of troops and of munitions. The discrepancy which the German Government pretend to have discovered between the declarations of His Majesty's Government as a whole, and those of the Admiralty in particular, appears to rest on a statement issued by the Admiralty and published on February 2nd, in which particular notice is given to the allegation of Adalbert Messany, circulated in a German wireless press message, to the effect that 2,500 soldiers, who were not invalids, had been carried by the hospital ship *Britannic*. With reference to this allegation, the Admiralty stated that no British hospital ship had ever embarked any persons but invalids and hospital staff. There was no occasion in that particular connection to refer to munitions. The play which the German Government make with this imaginary discrepancy is an illustration of their practice of trying to make capital out of infinitesimal points, a practice which has the appearance of being adopted in order to cover up the weakness of their main position."

The specific allegations contained in the annexes to the German memorandum of January 28th, and in the memorandum of March 29th, were then dealt with and refuted in each case.

In the covering letter from Mr. Balfour to Sir Walter Townley, His Majesty's Ambassador at The Hague, through whose hands the German memoranda had been submitted, the hope was expressed that the German Government "will, after an examination of the contents of the memorandum, withdraw the false charges which they have made regarding the misuse of British hospital ships, and will give unconditional instructions to their naval forces to grant these vessels in the future the immunities which are due to them under the provision of International Law."

The first incident of 1917 was the damage, happily not fatal (this vessel was afterwards torpedoed and sunk on February 26th, 1918), to the hospital ship *Glenart Castle* on March 1st. When she was between Havre and Southampton, about eight miles north of the Owers Lightship, at 11.40 p.m. a terrific explosion occurred, destroying the dynamo and also the Marconi installation and thus leaving the ship in darkness and without means of signalling. To

what a test of nerve and courage all on board must have been submitted when the detonation and the rending of the ship's hull were followed by the extinction of the lights !

The weather, though hazy, was fine, and the sea smooth. All hands were at once ordered to their stations, and boats were lowered. The whole of the medical staff, patients, and crew, with the exception of a few of the latter who stood by the ship, were placed in boats and trawlers. It was then found that No. 4 hold was filling, as were also the engine-room and stokehold. At 12.30 a.m. on the 2nd the ship was gradually sinking by the stern. In an effort to save her, the Government tug *Magnet* took her in tow at 3.45 a.m., No. 4 hold being already nearly full. At 6.30 a.m. another Government tug, the *Grappler*, arrived alongside and began pumping, receiving the assistance, an hour and a half later, of the Government tug *Sprite*.

It was now a race against time, for the *Glenart Castle* was almost on the point of sinking. Owing, however, to the untiring exertion of all hands, she made port at 9.45 a.m., and an hour later entered the dry dock, the pumps from the salvage tugs having just succeeded in keeping her above water. The ship was drawing thirty-six feet on arrival.

In his report on this incident to the Union Castle Company, the master, Mr. E. W. Day, wrote as follows :

"I wish to bring to your notice the splendid discipline and heroism and obedience to orders which everybody displayed under these difficult and trying circumstances. I cannot speak too highly of the conduct of everybody. The behaviour of the medical staff and nurses was splendid. The fact that 525 patients, including 300 stretcher-cases, were safely embarked in the boats speaks for itself. The disembarkation was carried out as at boat-drill, without a hitch or any panic or confusion."

Of the total number on board, a crew of 115, a medical staff of 68, and 525 patients, all were saved.

As to whether the *Glenart Castle* had been damaged by a torpedo or a mine, the evidence was inconclusive, although the weight of the expert testimony pointed to the probability of a German floating mine. Reporting on the whole occurrence, the Court of Inquiry found that

the steps taken by both the master and the medical officers on board to get the wounded away from the ship as soon as possible were adequate and were accomplished in a manner deserving of all praise, and they further drew attention to the fact that men unable to walk were carried down the accommodation ladder, which had no man-rope, in the dark, upon the backs of hospital orderlies, without accidents.

Further evidence of the fine discipline and courage of all on board was afforded by Major William E. Home, R.A.M.C., who stated that in every case the clustering men stood back to let the sisters enter the boats first, and that not one single case of selfishness, insubordination, or panic occurred. And to his testimony, Admiral The Hon. Stanley Colville added the following remarks :

“ I submit that the very greatest credit is due to Captain Day, Major Home, and all those on board the *Glenart Castle* for the splendid way in which they got all the wounded safely out of the ship in spite of being in darkness. The ‘ abandon-ship ’ routine appears to have been excellent and had been properly exercised. Great credit is also, I consider, due to Lieutenant William A. Thompson, R.N.R., and ship’s company of H.M.S. *WIZARD*, and the skippers and crews of H.M. drifters *Pitblae* and *Magnet III*, who embarked between them the extraordinary large number of 532 wounded men and showed them the greatest kindness and attention under very trying circumstances.” These officers received the thanks of the Lords Commissioners of the Admiralty.

In the case of the hospital ship *Asturias* (master, Mr. C. F. Laws), which met her fate off Start Point at midnight on March 20th, 1917, there was no doubt that she was deliberately attacked by a submarine and torpedoed without warning.¹ She was subsequently towed into Plymouth harbour. A Belfast steamer of 12,002 tons, she had been requisitioned as a hospital ship from the Royal Mail Steam Packet Company. She was six days out from Malta and had called at Avonmouth on her way to Southampton when the attack occurred. The weather was clear, but there was a choppy sea. Travelling at a speed of 14½ knots, she was fully lighted, and bore all the

¹ The *Asturias* had previously been attacked by a German submarine on February 1st, 1915, but escaped.

prescribed distinguishing marks, a green band fifty feet above the water and an illuminated red cross. Struck by the torpedo under the counter in the region of the star-board propeller, she was so seriously damaged as to become almost immediately unmanageable, though it was found possible, happily, to save 335 of those on board in her own boats and with the aid of a couple of trawlers which lent assistance.

In his report of this incident, Lieutenant George Mummery, R.N.R., of the trawler *Stanley Weyman*, gave the following account of the events subsequent to the torpedoing of the *Asturias*. “The first thing I saw was a white and red light and two rockets at about ten minutes to twelve. About E.S.E. of us I saw in this direction the lights of a hospital ship. I steamed full speed towards her. It was about ten minutes afterwards when we saw a signal—blue and red lights. This time it was about ahead. I continued to proceed at full speed until I saw the hull of the ship between us and the Start Light. The hospital ship’s lights by this time had been extinguished. I continued to close her until she switched on a cluster of lights. I blew the whistle. The lights were extinguished. Immediately afterwards I saw a white light leaving her stern—the boat’s light. I then stopped and picked the boat up. While I was picking the boat up, I heard cries for help. I got my own boat out, manned the lifeboat we had picked up, and sent them off to pick up as many people as they could get. They came back with five men picked out of the water. I took them on board and sent the boats off again for others. They came back about half an hour after with two men only, picked out of the water. While the boats were away I found two lifeboats floating—one water-logged and one apparently all right. There was one man in each boat. I got them out of each boat, and by that time my boats had returned to the ship. There was no sound or sight of anybody about, and as the hospital ship had disappeared, I made for Plymouth.” The trawler *Casoria* also rescued some of the crew; but in all fifty lives were lost, twenty-two persons being wounded by the explosion of the torpedo. The torpedoing of the *Asturias* was afterwards openly claimed by the German Government as a U-boat triumph.

Ten days later, on March 30th, the *Gloucester Castle*

(7,999 tons ; master, Mr. E. J. Holl) was also attacked by a submarine in the middle of the English Channel. As in the case of the *Asturias*, the attack was made at midnight, when the invalids and attendants had settled down. The sea was rough and the hospital ship was rolling heavily ; the work of rescue by the transport *Karnak* (master, Mr. C. R. Stewart), the destroyer *BEAGLE*, and the *P.19* was, in consequence, effected under very great difficulties. There was, nevertheless, no greater loss of life than that of two members of the crew, who were killed by the explosion, and one wounded man who subsequently died in a boat. The fact that there were on board at the time nearly 400 patients, many of whom were quite helpless, either as the result of severe wounds or grave disease, is in itself a very remarkable tribute to the preparedness, heroism, and seamanship of all concerned. Captains Holl and Stewart were each awarded the D.S.C. About five hours out at sea, the *Gloucester Castle* was steaming with lights burning, when the torpedo struck her exactly below the centre of the Red Cross. That she had been struck by a torpedo was afterwards fully confirmed by the discovery of a fragment of steel, about three inches long by one wide, which was unmistakably part of the foremost or after, but probably foremost, air-vessel-flange of a German 50 cm. submarine type torpedo. And indeed the torpedoing of the *Gloucester Castle* by a submarine was announced in the Berlin wireless report of April 11th following. She was subsequently towed into port.

The loss of the hospital ship *Salta* off Havre on April 10th, 1917, was unfortunately due to her failure to comply with the directions given her by the examination vessel and patrolling trawler. A German minefield had been located that morning at one and a half miles to the northward of the whistle buoy. On approaching that buoy from the north-westward about 11.30 a.m., the *Salta* was warned of the danger and conducted safely past it. She was then told to proceed into harbour ; but instead of doing so, for some reason which could not be ascertained, as the captain went down with his ship, she turned back, and was carried by the heavy sea on to the mines. She sank within five minutes.

Although there was, unfortunately, a somewhat heavy

loss of life, including 5 officers and 37 of other ranks of the R.A.M.C., with 9 nurses and 79 members of the crew, the incident was made memorable by the extremely daring work of the rescuers, the destroyer DRUID, P. 26, and a group of trawlers. Lieutenant-Commander T. C. C. Bolster of the DRUID, who received the D.S.O. for his skill and courage in making many rescues in a heavy sea, and in the midst of a minefield, called particular attention to the conduct of Lieutenant F. A. Innes, R.N.R., and Acting Sub-Lieutenant S. R. Sunnucks, R.N.R., as well as of Leading Signalman J. H. Powell, who distinguished himself by getting into half-swamped boats and passing bowlines round many helpless survivors. In this way, three nursing sisters and thirty-eight men were rescued. An hour later, while on her way to Havre, P. 26 herself struck a mine and was broken in two at her engine-room. Lieutenant-Commander Bolster at once placed the DRUID so that her dinghy and motor-boats were abreast of the bridge and gun-platform respectively of P. 26, the survivors in the latter scrambling on board the DRUID as the vessels rode together. The lost hospital ship was a French vessel of 7,284 tons sailing under the British flag.

The next news of the sinking of a hospital ship came from the Mediterranean, the *Dover Castle* (master, Mr. T. H. Wilford) being torpedoed on May 26th, 1917, while on her way from Malta to Gibraltar. A vessel of 8,271 tons, she was carrying at the time a crew of 141 with 700 medical staff and patients. She was in company with another hospital ship, and was under the escort of two destroyers. It was at 7.3 p.m. that an enemy torpedo struck her on the starboard side amidships. Six of the crew were killed as the result of the explosion and the engine and boiler rooms immediately filled with water. Three of the boats were rendered useless, but, as soon as the vessel had lost her way, the other boats were lowered and the patients ordered into them. While this was going on, the escort, CAMELEON, took on board the rest of the patients and the crews to the number of about 200, and also embarked the remainder of the men from the boats. Perfect discipline was maintained throughout, and about 8 p.m. the CAMELEON left for Bona, leaving the master and sixteen volunteers standing by to investigate the damage. Examination now showed that the engine-room had water above the cylinder

tops and also that the forward stokehold was full. The ship was, however, on an even keel, and did not seem, after she had levelled up, to be making any more water. The weather being calm, Captain Wilford came to the conclusion that, with the aid of tugs, she might reach port. At 8.30, however, the submarine again approached the ship, and discharged a second torpedo, which struck her on the starboard side forward of the bridge. The ship now began to go down rapidly by the head, and had to be abandoned by the master and his sixteen volunteers, sinking four minutes later about four hundred feet away from them. Immediately after this, the conning-tower of the submarine was seen quite close at hand. The little party was picked up soon after two o'clock in the morning by a French patrol, and transferred to the *CAMELEON*, which was returning from Bona after landing patients.

The *Dover Castle* was showing the Red Cross and Admiralty Ensign, and had 841 persons on board, including wounded. She was sunk by the UC67, of which Lieutenant Karl Neumann was commander. Three days earlier, this submarine had sunk the *Elmmoor* (3,744 tons) and the *Elmmoor's* master, Captain G. Williamson, was a prisoner on board. On the afternoon of the 26th the submarine was on the surface, and Captain Williamson was allowed on the lower deck from 1 p.m. till 5 p.m. All that time the *Dover Castle* and her escort were visible. Even from the lower deck, and with his naked eye, Captain Williamson could see that she "was painted white or some light colour," and he "concluded that she was a hospital ship." The Germans in the conning tower, with powerful glasses, could have had no difficulty whatever in recognising her as such. At 5 p.m. he was ordered below, and at that moment noticed that the *Dover Castle* had altered her course to starboard. The submarine at once put her helm to port, and directed her course to cross the steamer's track. Captain Williamson was horrified to realise that the submarine intended to attack, knowing the class of ship the *Dover Castle* was. The vessel was torpedoed twice, the submarine submerging in the interval.

The last incident of 1917 in which a hospital ship was involved also occurred in the Mediterranean. While on passage from Salonika to Malta with about 400 wounded on board, the *Goorkha* (6,335 tons) struck a mine on October

17th. Fortunately no one was injured by the explosion, and though badly damaged in the bows, the vessel was able to reach port, where she transferred her wounded to the *Braemar Castle*.

Several circumstances contributed to render the sinking of the hospital ship *Rewa* (7,308 tons), on January 4th, 1918, conspicuous as a revelation of the enemy's determined and heartless policy. The ship was at the time many miles from the nearest land, with little prospect of succour; she was crowded with sick and wounded; and the attack was delivered just before midnight, when all except the officers and men actually on duty had turned in for the day. Moreover only a few months before an arrangement had been come to which it was hoped would put an end to such outrages. Early in August 1917 the British Government, in order to remove all possible suspicion in the mind of the enemy that hospital ships were being misused, had agreed that each ship passing through the Mediterranean should carry a neutral commissioner appointed by the Spanish Government. The Spanish authorities promised their co-operation and appointed eleven officers to proceed to various naval ports in readiness for embarkation when necessary, thus enabling a guarantee to be given to the enemy that hospital ships were being used only for the sick and wounded. Though the agreement applied only to the Mediterranean, by implication the assurance was conveyed that such ships were conforming to The Hague Convention when they passed outside the Mediterranean. The German Government had, indeed, affirmed that hospital ships bearing the usual distinctive markings were free to navigate in the Atlantic Ocean and the North Sea, with the exception of the English Channel. Consequently such ships could move, in accordance with that understanding, without danger of attack provided they kept to the west of a line from Land's End to Ushant.

There was every reason to assume, therefore, that the *Rewa*, which had a medical staff of 79 and 279 patients, besides a crew of 207, was protected by this proviso framed by the Germans themselves. She was homeward bound from Malta to Avonmouth, flying the Red Cross flag, and showing steaming, navigation, and convention lights. She was, in short, as conspicuous as she could well be made in accordance with the terms of The Hague Con-

vention. During the passage up the Mediterranean, a Spanish officer travelled in her as a guarantee that the Convention was not being abused. This officer left her at Gibraltar and the voyage was then resumed. On January 4th the *Rewa* was steaming at the rate of eight or nine knots in the entrance to the Bristol Channel, being about nineteen miles to the westward of Hartland Point, when she was struck by a torpedo. The ship shook from end to end, and in the darkness patients, medical staff, and merchant seamen realised that they were in peril of sudden death. Four of the crew were killed and two of the boats were destroyed by the explosion.

The night was fine, with the Trevoze Head and Hartland Point lighthouses clearly visible, and, although the Spanish officer who had travelled on board the ship in the Mediterranean had guaranteed the *bonâ fide* character of the voyage, a vigilant look-out was being maintained. The third officer, Mr. B. T. Evans, who was in charge, was on the flying bridge, with Quartermaster Fisher at the wheel. Quartermaster W. Moyse had just sounded seven bells in the first watch, when he sighted, on the port bow, a white flashing light, low on the water, about two miles distant. He reported it to Mr. Evans, who descended to the lower bridge, from which he saw a second light. As he was uncertain what these lights were, although he thought they possibly indicated the presence of a pilot vessel, he called the master, Mr. John E. Drake, who himself saw the light as soon as he reached the bridge. It was about a mile distant, and appeared and disappeared at irregular intervals, as though placed low down in a small boat. "I thought at the time," Captain Drake declared, "that it must be a small sailing craft, although no sails were visible. After a short interval I saw another small white light. It seemed to come from the same craft as the first, and it also was low down on the water. It was much fainter than the other light and seemed to be dimmed. I ported my helm when the lights were from three-quarters of a mile to a mile ahead. Though I ported my helm two and a half points, I did not seem to alter my position as regards these lights, which maintained their position about four points on my bow. I remember remarking on this at the time, and was particularly careful to watch any further movements of

the lights. About three or four minutes after I ported my helm a violent explosion occurred amidships, approximately at 11.15 p.m., in a position $50^{\circ} 55' N.$, $4^{\circ} 59' W.$ " The officers and men of the crew behaved with great calmness, inspiring those on board with confidence as they went about their duties. There was no panic, and "everyone," as Captain Drake afterwards stated, "behaved in a manner beyond all praise."

Mr. Evans had instantly signalled for the engines to be put full astern when the explosion took place. Getting no reply from the engine-room, he then put the telegraph to stop. Captain Drake gave orders for the bulkhead doors to be closed and for the boats to be got away; a wireless call for help was also sent out. Mr. Evans, as soon as he was free to do so, ordered the ward attendant to get his patients into his own boat. When she was full, he returned to the captain and was directed to lower away and get clear of the ship. Mr. Evans, who had not again seen the suspicious lights, got his boat away about ten minutes after the explosion had occurred. The ship settled down on an even keel about two o'clock on the morning of January 5th. Fortunately for everyone the sea was comparatively smooth. The remaining boats, to the number of thirteen, had been handled in the darkness with equal skill and promptitude, and thanks to the vigilance and exertions of H.M. trawlers *Benstrome* and *Lark II* and the oiler *Paul Paix*, all on board were rescued. It was about 11.40 p.m., while on patrol twelve miles south-west of Hartland Point, that Mr. D. McMillan, Chief Skipper, R.N.R., of the *Lark II*, received a signal from the *Benstrome* that the *Rewa* was sinking off Hartland Point. He accordingly made for the spot at full speed, and sighted red flares about midnight. Forty minutes later he succeeded in picking up three boats, carrying 150 persons in all, including three nursing sisters, patients, and crew. Cruising about till 3.40 a.m., Mr. McMillan then learnt from the *Benstrome* and the *Paul Paix* that all hands had been safely picked up. He landed his passengers, therefore, at Swansea, at 10 a.m. Chief Skipper G. Birch, R.N.R., of the *Benstrome*, also succeeded in picking up nine or ten boats full of passengers. Both these skippers, as well as the master of the oiler *Paul Paix*, received the special thanks of the Admiralty for their prompt and

effective work. Captain Drake was shortly afterwards given a Commission as Lieutenant in the Royal Naval Reserve.

On representations being made to Berlin, through the Spanish Ambassador, the German Government, no doubt warned by the painful impression which this outrage had made in neutral countries, replied denying that the *Rewa* had been sunk by a submarine, and suggesting that she had probably been destroyed by a mine. Mr. Balfour, as Secretary of State for Foreign Affairs, pointed out, however, that an enemy submarine was known to have been in the vicinity at the time, since at 4.40 p.m. on the same day the schooner *Pauline* had been attacked by an enemy vessel, which had been visible on the surface in Lat. 50° 23' N., Long. 5° 28' W., while at 10.10 a.m. on January 6th, the steamships *Spencer* and *Halberdier* were torpedoed and sunk in Lat. 52° 23' N., Long. 5° 30' W. The two lights sighted, shortly before the explosion, had evidently proceeded from a low-lying vessel, such as a submarine. Although it was a clear, fine night, it had been impossible to see her closely, even with glasses. It was further evident, Mr. Balfour added, that this enemy vessel had deliberately altered her course so as to conform to the movements of the hospital ship, and that after the explosion, although she had been in close proximity to the sinking vessel, she had offered no assistance whatever. He remarked further that friendly and neutral vessels would have had no reason to follow the movements of the hospital ship, to the extent of getting in a favourable position for a torpedo attack, and that they were also, in fact, never slow in rendering assistance to ships in peril. Lastly, it was pointed out that the German Government must have been well aware that their vessels would not have laid mines many miles from land, in a locality where their own submarines were habitually operating, and as a fact no mines were found in this locality at any time, before or after the destruction of the *Rewa*, although the area was thoroughly swept.

A certain amount of stress was afterwards laid by the German Government on the fact that a wireless message had been intercepted at the time of the disaster, stating that the *Rewa* had been mined, while comment was also made on the interval of time which elapsed between the

occurrence of the disaster on January 4th and the publication of the loss on January 9th. The official reply to these criticisms was, first, that those on board the *Rewa*, when sending out their call for assistance, had had no time to form a considered opinion as to the cause of the explosion, and that it was to their credit that they had been willing, while the matter was still uncertain, to take the more charitable view that the vessel had struck a mine. With regard to the delay, the Board of Admiralty had been naturally and properly reluctant to state that the ship had been torpedoed until the question had been definitely placed beyond all reasonable doubt.

Not only was the *Rewa* sunk outside the waters in which the German Government had stated that they would attack hospital ships, but a few weeks later, in almost the same neighbourhood, the *Glenart Castle* (master, Mr. Bernard Burt) was torpedoed, with a very heavy loss of life. Formerly known as the *Galician* (6,824 tons) and belonging to the Union Castle Line, she had been stopped earlier in the war, on August 15th, 1914, between Mossamedes in Portuguese West Africa and Teneriffe by the German armed liner *Kaiser Wilhelm der Grosse*. On that occasion she was allowed to proceed on her voyage, the German signalling to her, "On account of your women and children I will not sink the ship. You are released. Bon voyage." This chivalrous attitude of the German naval officers in the earlier part of the war is in marked contrast with their callous behaviour in later years. Since the autumn of 1916 the *Glenart Castle* had been employed as a hospital ship. As already stated, she struck a mine in the English Channel on March 1st, 1917, but was saved from sinking by good seamanship. Similar good fortune did not attend her early in the following year when on her way from Newport (Mon.) to Brest to embark wounded, having on board a crew of 122 officers and men, and a medical staff of sixty-four, including eight women nurses. On the morning of February 26th, in the darkness preceding the dawn, she was torpedoed in the entrance of the Bristol Channel. Her course was then S. 63° W. and her speed about 10 knots. She was showing the usual navigation and hospital ship lights. There was consequently no mistaking her character, for she was ablaze with electric lights. The enemy pursued much the same tactics as in

the case of the *Rewa*. About an hour before the *Glenart Castle* was attacked, a bright light was noticed on the starboard bow, very low down on the water. This light changed its position from starboard bow to starboard quarter and was last seen on that bearing about half an hour before the explosion occurred.

As a precautionary measure, the ship's course was altered when the light was observed, but this did not avail to save her. For, at three minutes to four, when she was about fifteen miles south-west of Lundy Island, the *Glenart Castle* was struck by a torpedo on the starboard quarter. The lights immediately went out, and as the wireless installation was rendered useless no signal for help could be made. The chances of life of any one on board must have seemed slender, for the night was dark and cold, the sea was rough, and the boats on the starboard side had been smashed to atoms, a considerable length of the deck having also been ripped up. Most of the passengers and many of the crew who were off duty, were asleep, protected, as they imagined, by the flaming Red Cross on the vessel's side, when the vessel reeled under the terrific blow she received.

The crew swarmed on deck—for the most part without coats or boots, being scantily clad in the few things they could snatch up in the hurry of the moment. It was soon evident that the vessel was sinking fast, and every effort was concentrated on getting away the boats which remained seaworthy. But they sufficed only for a small proportion of those on board, and the remainder, either jumping into the icy cold water or being washed off the deck as she sank, were faced with death in an appalling form. The vessel went down about seven minutes after being struck.

What added to the horror with which this crime was regarded as soon as the news of it became known, was that survivors still struggling in the water saw a submarine at a distance of not more than one hundred yards. Many of the men who were fighting for their lives shouted to the Germans for help. With a callous disregard for the bare decencies of humanity, the German crew took no notice of their appeals and left them to drown. Hitherto nothing had occurred in this war on the Red Cross as brutal as the conduct of these enemy seamen. Everything pointed to the vessel having been torpedoed with

deliberation. It was impossible to ignore the evidence suggesting that the barbarity with which drowning men and women were left to their fate was intended to increase the sense of jeopardy of merchant seamen and others who had hitherto treated the German threats and acts with contempt.

Some details of the sequence of events were supplied by Lance-Corporal C. Beveridge, R.A.M.C. He was in bed and asleep when the *Glenart Castle* was torpedoed.

"I was awakened," he said, "by the explosion. I was thrown out of bed and gave everyone a shout that something was wrong, as all the lights had gone out. I picked up a lifebelt and ran up on deck, and made for the boats, but the skipper ordered me back, as other boats were being smashed against the side by the heavy sea. Immediately after that the order came 'Every man for himself,' and I went down the ladder; just as I was reaching the water, the ship went under drawing me with it. I had been in the water for about half an hour struggling in the wreckage, with about twenty others, when the submarine passed within twenty-five to thirty yards of us, and we all shouted to them to take us aboard, but they passed on and did not answer us, although some of the fellows were drowning then. The submarine was on the surface, and I plainly saw the conning-tower, and two men on it, but before this I saw the periscope coming towards us, and I thought at first it was a boat or something coming to rescue us. The submarine appeared to be a very large type, about the same as the one I saw firing on a ship in the Mediterranean, when I was aboard the *Valdivia* about April or May 1917. One man appeared to be standing on a little platform of the conning-tower, and the other inside, leaning over looking at us."

Confirmation of Corporal Beveridge's story was given by one of the crew of the *Glenart Castle*, Alfred Bale.

"I was going on watch and had just got to the top of the ladder to the engine-room when there was a loud explosion; all lights went out immediately. I at once made my way along the starboard alley-way into the afterwell deck, and then up on to the boat deck to the port-

forward lifeboat, and helped to clear and lower it. We had just got the boat into the water, when I heard the chief officer shout 'Every man for himself.' I then slid down the boat falls with two other men, but before we could cast the falls adrift, the ship sunk and I was thrown out of the boat. When I came to the surface, I saw a boat bottom up with three men clinging to it, and made my way towards it, and held myself up on the keel. Soon after, I saw what I took to be a schooner coming towards us, and we all shouted together; a lot of men close to us in the water also shouted. A minute or two after, I saw it was not a schooner, but a submarine on the surface, and said to the man next to me on the boat, 'We can expect nothing from him; it is the submarine.' The submarine was not more than a hundred yards away then, and I could distinctly see the outline of the hull and the conning-tower. About half an hour after, a raft drifted alongside, and I got on board to make room for the men on the boat. I held on to the boat for some time, but eventually had to let go. I did not see the men on the boat again. I was picked up about 3.30 p.m. the same day."

Something of what was undergone by the few survivors can also be gathered from the vivid account afterwards given by another member of the crew, a Newport man, who was rescued with many others by a French sailing vessel, the *Le Faon*.

"It was pitch dark, and there was a formidable sea running. . . . When I got on deck with only my pyjamas on, I could see that most of the boats on the starboard side had been smashed and the deck ripped open by the explosion. Most of the stern was awash and it was evident the ship was sinking rapidly. Captain Burt was cool and resourceful, and there was no disorder on board, but the explosion had put out all the lights. In the circumstances it was impossible for anyone to see what was going on, or how many managed to get into the boats, but I know that most of the boats that were intact were launched and filled. Our boat was the third boat launched. At any rate, all the uninjured got into the boats. The sea was very rough, and the night cold, and

after we got away from the vessel we saw very little of the other boats owing to the darkness. . . . We pulled away promptly from the vessel, which went down in about seven minutes from the time she was struck. We had a hard pull and a bad time in the boats, because most of us were entirely without clothing, except what we had been sleeping in."

Captain Burt was one of the most valued masters in the Union Castle service, and his conduct was worthy of the highest traditions of the British Mercantile Marine. He stood on the bridge to the last, and was heard to tell the quartermaster to get away to the boats, he himself apparently going down with the vessel when she disappeared in the tempestuous sea. Of the total number of persons carried, 7 officers of the R.A.M.C. and 43 of other ranks were lost, as well as the 8 army nurses ; 95 of the crew also perished, either as the result of the explosion or by drowning.

Reference has already been made to the little French sailing vessel, or dandy, *Le Faon*. With splendid gallantry her master, Joseph Marie Stephant, supported by his small crew, Louis Marie Derrein, mate, Julien Kerscho, and Joseph Marie Calloch, apprentices, succeeded in rescuing twenty-two survivors from the *Glenart Castle*. Their conduct was recognised by the award to them by the King of the silver medal for gallantry in saving life at sea, on the recommendation of the President of the Board of Trade. At about 10.50 on the morning of February 26th, about nine miles from Lundy Island, the *Le Faon* sighted one of the *Glenart Castle's* lifeboats in an almost waterlogged condition, and in imminent danger of sinking. The condition of everyone in the boat had become desperate. Navigating his little vessel with the utmost skill in a very heavy sea, the master of the *Le Faon* threw a line to the exhausted men, half dead with cold and exposure, which they succeeded in catching and making fast. He then let the lifeboat drop astern, after which he gradually drew it alongside, and when the two craft were gunwale to gunwale, he succeeded, with great risk of his vessel being swamped, in rescuing every one of the shivering and enfeebled men. It was a display of courage and seamanship worthy of the great maritime

Power to which Stephant and his three companions belonged.

No less gallant was the rescue of nine other survivors by the American destroyer PARKER. This vessel, at 9 a.m. on February 26th, had left her convoy s.s. *Eddystone* at Scarr Weather Light Vessel *en route* to the Irish Sea. Two reports had been received by her of submarines in the Bristol Channel during the night of February 25th-26th, and it had been decided, therefore, to search the Bristol Channel on the way to the Irish Sea. At about five minutes to one, when six miles off the south light off Lundy Island, the PARKER sighted a small raft, with a man on it. He was picked up, and found to be a survivor of the *Glenart Castle*, and although he believed himself to be the only one, a further search was made and three other rafts were shortly afterwards discovered, each containing three men. A line was thrown to one of these survivors, but owing to his weak condition he tangled himself in it, and fell overboard over the revolving screws of the PARKER. He regained the raft, which was badly broken up. With fine courage, Quartermaster J. C. Cole, of the United States Naval Fleet Reserve—an American merchant seaman—jumped overboard, swam to the craft, and held the drowning man until the whale boat could be lowered. With equal courage, second class Seaman J. T. Newman, U.S.N., also went overboard to assist Quartermaster Cole in the rescue. Unfortunately the man had been fatally injured by the propeller and died soon afterwards from the effects of hæmorrhage and exposure. Other members of the crew of the PARKER received special commendation for the danger they faced in jumping on to various small rafts and pieces of wreckage, or overboard into the water, in order to pass lines round survivors, who were most of them so exhausted as to be absolutely helpless. Of these rescuers, R. E. Hofface, chief boatswain's mate, J. H. Quinn, coxswain, F. F. Frone, seaman, David Goldman, second class machinist mate, W. E. Mathews, second class ship's cook, and F. W. Beeghley, third class yeoman, were especially mentioned. The PARKER landed all these survivors the same evening at Milford Haven. The United States Government received the thanks of the Admiralty for the timely help, and for the self-sacrificing courage of these humane seamen.

The attack on the *Guildford Castle* (master, Mr. Thomas Martin Lang), on March 10th of the same year, though unsuccessful, supplied further evidence of the enemy's determination to maintain a ruthless war on hospital ships, for in this case also the periscope of the submarine was seen by several persons. The *Guildford Castle* (8,036 tons) was homeward bound from Cape Town to Avonmouth with no fewer than 438 wounded men on board. She bore the usual marks of a hospital ship, and the funnel had recently been painted white, with a large red cross on each side. At 5 p.m., on March 10th, 1918, when she had entered the Bristol Channel, all the usual hospital lights were switched on and she was ablaze from end to end, so that there was no possibility of mistaking the errand of mercy on which she was engaged, even when seen at a great distance. The weather was clear, with a visibility of about eight miles. About noon that day a French, as well as a Spanish, steamship had been torpedoed and sunk by an enemy submarine in the locality through which the *Guildford Castle* was passing; but the hospital ship's safety was specifically guaranteed by a fifteen-foot Red Cross flag flying from the signal yardarm and by the scores of lights which shone from her sides.

Captain Lang was standing on the bridge at 5.35 p.m. when Mr. Henry Hall, the fourth officer, drew his attention to the track of a torpedo. It was then 600 to 800 yards distant, in line with a large patch of oil on the surface of the water. Instantly realising the peril, Captain Lang ordered the helm to be put hard-a-starboard, throwing his ship's stern away from the torpedo. The warning and the subsequent seamanlike promptitude in altering the ship's course saved her for the time, for the torpedo passed astern. What happened afterwards is less certain, for every second was one of strain and stress. But according to Mr. Hall, the *Guildford Castle* in swinging struck some object upon the port side. The ship shivered under the blow; she listed about four degrees, but almost immediately recovered. Distress signals were promptly dispatched, patients and crew mustered, and the boats prepared for launching. Captain Lang had in the meantime ordered the ship to be sounded, and as examination showed she had received practically no damage, the precautionary measures were negatived, and the ship, re-

suming her passage at the utmost speed, reached her destination in safety.

When the *Guildford Castle* reached port and was dry-docked, the chief officer, Mr. J. D. Kerridge, examined the hull. He found abreast of No. 1 hatch a number of marks (six) about ten inches long in line with the bilge keel (port side) scarred with paint and rust. They were of a grey colour, as though paint was embedded in them; these marks disappeared on the bilge keel, reappeared abaft, and continued right aft to the propeller, one blade of which appeared to have cut into some object, as the edge of the blade was marked from two feet of the neck up as far as the point, which was slightly bent. There was also a mark abaft the bridge four inches in diameter about ten feet above the bilge keel. It continued for the length of the ship's side as though some object had bumped along. There can be no doubt that the marks were caused by a torpedo, which failed to explode.

The periscope of the submarine was actually seen by Corporal A. Jackson, of the Army Service Corps, at about 5.45 p.m., when he was standing on the port side of the stern of the ship. It was moving apparently with the ship and then disappeared, evidently when the submarine submerged. Shortly afterwards he saw "something" that left a trail on the water and was approaching the *Guildford Castle* at considerable speed. "It looked exactly the same as the photographs I have seen of torpedoes travelling through the water. It passed, I should say, about thirty yards from the stern, and seemed to alter its course away from the ship. Shortly after I felt something hit the ship, but I did not see anything, and cannot say what it was." Sapper F. W. Gibson, of the Royal Engineers, also noticed the periscope of the submarine. No shadow of doubt existed that this hospital ship was deliberately selected for destruction, her distinctive markings being ignored.

The *Guildford Castle* was the third hospital ship that had been attacked in the short space of three months in the entrance of the Bristol Channel—a locality which had been announced by the German Government as being free to the passage of hospital ships.

The *Llandovery Castle* (11,423 tons) was less fortunate than the *Guildford Castle*, for, on June 27th, she was

attacked and sunk while out in the Atlantic, over one hundred miles west of the Fastnet, with a terrible loss of life. Whether it was the enemy's intention to sink the vessel with all on board, leaving no trace of the outrage, must remain a matter of surmise. But it was due to no consideration on the part of the Germans that a single person on board survived to tell the story of the disaster. The *Llandovery Castle* (master, Mr. Edward Arthur Sylvester) was one of the newest ships of the Union Castle Line, having been launched in 1914. At the time of the attack she was homeward bound from Canada, and, therefore, fortunately, had no sick or wounded on board. She carried, however, a Canadian crew of 164 officers and men, 80 officers and men of the Canadian Army Medical Corps, and 14 female nurses. Out of this total of 258 persons, only 24 survivors, all contained in one boat, reached port. They were picked up by the destroyer *LYSANDER* on the following day. Captain Sylvester, who was among them, afterwards gave a succinct and lucid account of what was one of the most shocking atrocities of the whole German submarine campaign.

"At 9.30 p.m. on June 27th, when about 114 miles S. 74° W. (true) from a position 15 miles south (true) from the Fastnet, the ship was torpedoed by an enemy submarine, without warning. At the time, the vessel was steering a steady N. 74° E. (true) course at 13.6 knots, and was showing navigation and the usual hospital ship lights. So far as I am aware, no one saw the wake of the torpedo. About three minutes after the explosion, the carpenter reported the ship was hit in No. 4 hold, and would not remain afloat. I then gave orders to lower all the boats and sent them away, and on the chief officer coming up to lower the starboard accident boat I ordered the ship to be abandoned. The second officer found a lifeboat with the after-end lowered in the water and the fore made fast, the bow hanging in the air by the tackle. With the assistance of a steward, the second officer lowered this boat into the water, and the remainder of those on board went down the ropes into her. I went down a life-line into the boat, and we pulled off from the ship, pulling away just in time to avoid the suction as she went down stern first. This was not more than ten

minutes from the time she was torpedoed. We pulled over the spot as soon as the turmoil had subsided, and succeeded in picking up eleven men from rafts and wreckage. We were pulling down to a man who was calling out from the water ahead of the boat, when a submarine appeared and ordered the boat alongside. The second officer replied, 'We are picking up a man from the water.' As the order was not promptly obeyed, two revolver shots were fired over the boat, and someone on the submarine shouted, 'Come alongside, or I will shoot with my big gun.'

"The boat accordingly proceeded alongside the submarine. I was taken on board to the conning-tower. An officer, who appeared to be in command, asked me what ship it was. I replied, 'The hospital ship *Llandovery Castle*.' He said, 'Oh, yes, but you were carrying eight American flight officers.' I answered, 'I beg your pardon; we were not. We have seven Canadian medical officers on board, and the ship is chartered by the Canadian Government to carry sick and wounded men from England to Halifax.' To this, the reply was, 'You have been carrying American flight officers.' I answered, 'I have been running to Canada for six months with wounded, and give you my word of honour that we have carried none except patients, medical staff, crew, and sisters.' The officer asked if any Canadian officer were in the boat, and on receiving the reply 'Yes' ordered him on board.

"On the Canadian officer coming to the conning-tower, the officer said to him, 'You are an American flight officer.' I said, 'No, he is not: he is a Canadian medical officer.' The submarine officer then asked the Canadian officer what he was, and on receiving a similar reply ordered him back to the boat. I was also ordered back to the boat, and warned to get away as soon as possible. The boat was let go, oars got out, and we proceeded to pull away from the submarine.

"The submarine then circled round through the wreckage at full speed, twice coming close to the boat; the occupants of the boat shouted out 'same boat.' The boat was again ordered alongside the submarine, and the second and fourth officers were taken aboard. After a few minutes, these two officers returned to the boat, and we cast off and proceeded. The submarine, after circling round again, just missing the boat twice, the last time by about two

feet, went a short distance away and appeared to stop. From this position she opened fire at unseen targets and fired about 12 shells. One shell passed near the boat. We set sail and saw no more of the submarine, and were finally picked up by a destroyer. I declare that the German officer's allegations that the *Llandoverly Castle* was being employed contrary to The Hague Convention were utterly false."

Similar evidence of the callousness and brutality of the officers and crew of this German submarine was given by Mr. L. C. Chapman, second officer of the *Llandoverly Castle*. He was asleep at the time of the explosion, but went on deck, and superintended the lowering of the starboard boats. When the boats had gone away, he left the ship, in port No. 4 lifeboat. Mr. Chapman confirmed the statements of the captain, and then added his own experiences when he, in company with the fourth officer, was ordered on board the submarine. "The officer asked me who I was, and if we were carrying American flight officers. I said, 'No,' and then he said, 'You had ammunition on board; there was a loud explosion.' I explained to him that it was the boilers had burst as the water reached them. He then told us to go back to the boat. We were then ordered to cast off again. After we left the submarine we put up our mast. The submarine came towards us with a high speed and just missed sinking our boat by a few feet. Our captain ordered us to set sail. The submarine again came at us and missed us by two feet. The wash nearly capsized the boat. Shortly after I heard gun fire, and one shell passed over us. I saw a dozen shells burst in different directions. The captain then decided to make for land and try to get help. We sailed and rowed for about 71 miles, and then we were picked up."

Major Thomas Lyon, of the Canadian Army Medical Corps, also recorded the part which he was enforced to take in this horrible tragedy. When the explosion occurred, he obtained a lifebelt and torch, and then proceeded to see that the nursing sisters were safely on deck and eventually left the ship in the same boat as the captain and the second officer. When the boat had proceeded alongside the enemy craft and a call came for

“a Canadian officer” to go on board, he responded promptly.

“I jumped for the submarine, and just as I was landing on the deck, a German officer pulled my arm, with the result that I fell heavily, and broke my right leg just above the ankle. I was taken to the conning-tower, where the commander of the submarine was standing talking to the captain. The commander said to me, ‘You are an American flight officer.’ I said I was not, and that I was a Canadian medical officer. The German officer asked me whether we carried ammunition. I said, ‘No, we never carried anything except patients.’ We were then told to get back into the boat.”

It was impossible to send a signal from the *Llandoverly Castle*, since the explosion had destroyed the wireless installation, and there was no time to get the emergency dynamos at work before the vessel sank. Partly owing, no doubt, to the brief time that she remained afloat after being struck, and possibly owing to the action of the German submarine in thrashing up and down the wreckage, the boat containing the captain and Major Lyon was the only one that succeeded in escaping.

Some idea of the confusion following upon this particularly cold-blooded attack is suggested by the story afterwards told by one of the stewards who was rescued :

“When I first got on deck, I cut my foot among the mass of broken glass from lamps and windows that was lying about, but I managed to get to my station alongside the boat I was allotted to. As I was going down to the port side, I saw two or three boats hanging up in their davits, with nothing but their ropes left—they were just skeleton boats, all the sheafing having been blown away by the explosion. As my boat was being lowered, I jumped into the stern, and somebody who was standing on the ship’s deck let go of the fall, causing the boat to drop suddenly into the water. The fastening at one end of the life-boat was not loosened, and this caused the bows to swing away from the ship, and she filled and broke up, the ship dragging her along. We were all thrown into the water, except one or two who managed

to cling to the life-lines hanging from the davits. I got one and had a thirty-foot climb back to the ship. The life-line I was holding swung away from the ship, but a sailor pulled me on board, and I scrambled in. I am afraid most of those who were in that boat were drowned. I went across to the opposite side of the ship, looked over and saw another lifeboat alongside. I went down the rope ladder, and had just set foot in the boat, when she went from under me and filled. I held on to the rope ladder and had got half way up it when I felt my strength going, but I just managed to get back on board the ship, which was then sinking fast and listing to starboard.

"After I got on board again, I found that one of the chaps who was in the other boat had escaped too, and we were intending to get into the launch, but on second thoughts we concluded she would be sucked under when the ship sank, and so we changed our minds and got a raft out. There were several of these rafts and each was designed to keep twenty or thirty people afloat. They are really copper tanks about five feet long and enclosed in battens. We found the second engineer aft in his pyjamas; he had just rushed out of bed; and we helped him on with his lifebelt. He assisted us in getting the raft over, but I lost sight of him after that. The sailor who was with me got over the side on to the raft, and then a soldier—a medical staff man—turned up and they shoved off. I was standing on the ship up to my knees in water, and concluding she would soon go down, I dived over the side and joined them on the raft. We had a difficult job to keep the raft from being sucked under the ship, but we managed to clear, and we got about a hundred yards astern, when she blew up and sank with her bows upright in the air. There was a terrible roar of things falling as she went. . . . Well, after the ship went down, we were busy clinging tight, to save ourselves from getting taken off the raft by the wash the ship made, but we saw a light in the distance and heard the captain's voice. He was picking up men and we called to him. He said, 'All right, I will be with you in a minute,' and he came alongside in a lifeboat and picked us off the raft. . . .

"This occurred on Thursday night about 9.30 to 9.45, and we were out all that night, and all Friday, and we had two biscuits and about two tablespoonfuls of water

issued to us; but there was more kept in reserve, as there were only twenty-four in the boat and she was provisioned for fifty. We hoisted sail soon after the gun firing, and hoped to get out of sight of the submarine before daylight. We were all shivering with cold. I had only a vest and a pair of trousers on, and a thin white coat. Most of us had been overboard, except the captain, who was the last to leave the ship. We were picked up on Saturday morning at eight o'clock by the destroyer *LYSANDER*. If this had occurred on our journey to Halifax, there would have been a terrible death-roll, as we had a large number of Canadian wounded, and more than half of them had lost either an arm or leg. The ship went down in from ten to fifteen minutes. As we were being picked up by the destroyer, our captain was handed some water, and in tipping back his head to drink it, he over-balanced and fell into the sea. They managed to fish him up. Amongst those our lifeboat picked up out of the water was a fireman who had been in the Canadian nurses' boat, and he told us it filled and they all went under. I saw myself three or four boats go under. That was because the ship's engines could not stop, and she dragged them under."

In reply to the German insinuations that the *Llandovery Castle* carried American flight officers, as well as ammunition, Dr. Robert Harold Ker, Assistant-Director of Medical Service Embarkation, made a statutory declaration to the effect that he had inspected the ship on her arrival at Halifax on June 17th from a British port, and ascertained that, apart from the medical personnel and patients, there were no other persons aboard her, except the crew. Upon receiving notice that she was ready to sail again on June 20th, he again visited the ship, and satisfied himself that there were no changes in the medical personnel, but that all the medical personnel arriving in the ship were returning with her, with the exception of one or two who had been given leave, and that there had been no additions to the medical personnel. The Chief Military Embarkation Officer at the port of Halifax also made a statutory declaration to the effect that no person or persons had sailed from Halifax other than the ship's permanent medical staff, medical orderlies, and the

usual crew. This was confirmed by the Deputy Assistant Medical Director of Embarkation at the port of Halifax, and by the Naval Transport Officer, Lieutenant Frederick Henry Poole.

It was in reference to the loss of the *Llandoverly Castle* outside the zone in which the enemy had claimed the right to attack hospital ships that Mr. Bonar Law declared, in fitting language: "A wild beast is at large. It is no use arguing or reasoning with him. There is only one thing to do—to destroy him—and it is the duty of all the Allied nations to set our teeth until that end has been achieved."

The *Llandoverly Castle* was the last hospital ship to be attacked or sunk. The enemy, as this narrative indicates, proceeded from one outrage to another, with a disregard of the ordinary code of humanity which has no parallel in the history of warfare. It was evidently thought that, at last, the spirit of the crews of these hospital ships, if not that of the medical staff and the nurses, would be broken and that they would refuse to face such terrors. These true-hearted men and women, though they had never foreseen the ordeal to which they would be submitted in carrying out their work of mercy, and were without semblance of defence, remained faithful to the trust reposed in them, leaving to after generations a record of devotion and courage and sacrifice which will ever remain a source of pride to their fellow-countrymen.

CHAPTER XII

MERCHANT SEAMEN PRISONERS

THE sufferings of merchant seamen at the hands of Germany began before the declaration of hostilities, and many officers and men spent from four to five years of their lives behind barbed wire. They were exposed to many indignities, even when they were not the objects of wanton acts of cruelty. They were so badly fed in most of the camps that it was difficult to support life; the accommodation, particularly in the early days of the war, was often of a kind unfitted for a domestic animal, to say nothing of a human being, and exposure to cold and wet was a common experience. Until measures of relief could be organised in the British Isles and avenues of communication opened up, a large number of these merchant seamen were short of clothes and most of the ordinary comforts of life. So long as Germany believed that she could break the spirit of the men of the Merchant Marine, the commanders of several prison camps appeared to consider it a duty which they owed to their own country to inflict suffering on these seamen, and in particular on officers.

During the period of strained relations, towards the end of July 1914, the harbour authorities at Hamburg, Bremen, Bremerhaven, Stettin, Lübeck, Swinemünde, and other German ports began to put obstacles in the way of British ships leaving for sea. At first the ships were merely detained under various excuses. It was, for instance, declared that measures were being taken to defend the approaches to the ports and that if the ships moved they would incur the danger of being sunk. This regard for the safety of life of British subjects did not lead the Germans to warn incoming ships not to enter the ports, and day by day during the final hours of peace the number of British vessels in German harbours steadily increased.

By August 4th 155 British officers, with 888 ratings, were at the mercy of the Germans.

The experience of the Great Central Railway Company's steamer *Bury*, by no means an isolated one, may be cited as an illustration of the German procedure. This vessel arrived at Hamburg on August 1st, and, having discharged her cargo and passengers, was making for Cuxhaven two days later with about 180 saloon passengers, when a German torpedo boat ordered the captain to return to the river. The captain had no alternative but to obey these instructions. Many times he hove anchor with the intention of dropping his pilot at Cuxhaven, but each time he was forced to abandon his intention and told to anchor again near one of the German tenders. This interference continued until the morning of August 5th, when the pilot was taken off, and the *Bury* was directed to return to Hamburg. That port was reached the same evening, and a German vessel took off all the passengers, leaving the master (Captain E. Russell) and the crew only on board. About the middle of August, the harbour police, who spoke English sufficiently well to be understood, proceeded on board and mustered the crew, as they had done on a previous occasion, and then one by one they were sent into the charthouse, where six policemen were on duty. A slip of paper containing an undertaking not to participate in the war against Germany was then produced for signature. Refusal to sign, it was explained, would be regarded as evidence that the recalcitrant man was a spy and therefore liable to be shot, and, on the other hand, if the undertaking were given and afterwards broken, the signatory would invite the same fate. By these threats officers and men were compelled to sign the document. During subsequent weeks the ship was periodically visited by the harbour police, but otherwise the freedom of movement of officers and men on board the vessel was not restricted, and the captain was permitted to send ashore for such stores as he desired to supplement the fairly ample supplies which were on board, the *Bury* being a passenger ship. The Germans even permitted letters to be dispatched, but it was afterwards discovered that all this correspondence was impounded.

On the evening of October 15th, the harbour police again went on board the *Bury*, and the crew were directed

to get ready one change of underclothing, as on the following morning they would be removed to one of the prison hulks in the harbour. There were three of these hulks—the *Giesler*, *Siegfried*, and *Gneisenau*. Officers were placed in one of the hulks, a larger one was set apart for petty officers and men, while the third was crowded with other British seamen, West Africans, Poles, and Russians. On arrival on board, the personal effects of the British seamen, as well as their money, were taken possession of by the police and each was required once more to sign a declaration promising not to take up arms against the German Empire. So long as the orders, however unreasonable, were instantly obeyed, neither officers nor men received physical ill-treatment from the police, but any hesitation, to say nothing of disobedience, met with blows administered with a piece of asbestos packing about one and a half inches square and sixteen inches long. This was used with force, so as to cause bruises.

For three weeks the merchant seamen of the *Bury*, as well as of other ships in the harbour, were kept on board the hulks under the supervision of the harbour police, a military guard being mounted in a ship close by. The dietary on board the hulks was of an exiguous kind. At 7 a.m. a cup of coffee and one slice of black bread were issued. Neither the coffee nor the bread was good. At noon the prisoners were given about three-quarters of a pint of soup made from the following ingredients; horse beans, macaroni, cabbage, turnips, with usually a small quantity of potato added. Pigs' feet and hocks, or salt beef and pork were also boiled in the soup, but the condition of all this meat alike was "rotten" and "putrid." The compound did not, of course, contain the whole of these ingredients at any one meal, but some were used one day and some another. "The stench from the food was awful. The potatoes and vegetables were uneatable, and we had to pick bits out and throw the rest away. The putrid meat contaminated the other things boiled with it. If there was any soup over, some of us might get a small second helping, but three-quarters of a pint each day per man was a fair estimate of the quantity." At five o'clock the men received, as at breakfast, black bread and coffee. Though the food was bad, tables and stools were provided for meals, and the washing and sanitary arrangements were fair.

Early on the morning of November 6th the prisoners were mustered on the quayside, the military authorities took charge of them, and they were put into cattle trucks. There were, in all, about 1,300 men by this time. Thirty to forty were placed in each truck in charge of two guards with fixed bayonets. They were travelling throughout the day and were not allowed to leave the trucks for any purpose at the intervening stations, nor were they given any food or drink during the whole period of twenty-five hours which intervened between breakfast at Hamburg and a scanty meal which was provided at Ruhlben the following morning. Many of the men were well advanced in years, but they received no more consideration than the youngest boys.

The seamen at other ports fared even worse than the men who were caught in the maelstrom of war at Hamburg. The experiences of one seaman at Dantzic speak for those of all. He and his companions were taken off their ship on August 4th, and were put on board a coal barge where they were kept for two days without food. They were then removed to the local prison, where they spent one night, being given a little bread and coffee. The next morning they were taken to Donholm, an island in the Baltic near Stralsund, where they were detained for nine weeks with a large number of other seamen. They were lodged in stables and made to work on dredgers, pull ferry boats, load ammunition, and make slipways for flying machines, being up to their knees in water most of the time. They received no pay and were given very little food, and as all their spare clothing had been left in the coal barge they had nothing into which to change. One man became ill, a fact hardly surprising in the circumstances, and because he was unable to work he was so brutally beaten by the guard with the butt end of a rifle that he was seriously ill for five days afterwards.

The seamen who were landed at Wilhelmshaven were not only ill-treated by the guards in charge of them, but deliberately exposed to contemptuous treatment by civilians. The experience of a number of fishermen, who were captured in the North Sea towards the end of August 1914, was typical of that accorded to many hundreds of men who were disembarked at this naval port. On being landed, the prisoners were taken charge of by an escort of soldiers and marched through the streets to the naval prison. It

was a parade of humiliation. Civilians repeatedly broke through the ranks of the soldiers, who made little effort to protect their charges. The crowd spat in the faces of the prisoners and threw stones and lumps of coal at them. Meanwhile the soldiers kicked the prisoners or prodded them with their rifles. On arrival at the prison, each man was taken into a room and interrogated by a naval officer, who sat with a loaded revolver in front of him and threatened to shoot anyone who did not tell the truth. The men generally were charged with fishing by night and laying mines by day. During the examination, pursued in the hope of securing admissions, menaces were resorted to with the utmost freedom. When these threats proved unavailing, the men were put into prison cells, three to a cell. The cells were provided with only one sleeping plank apiece, so that two out of each party of three were obliged to find what rest they could on the floor. Two blankets were supplied in each cell. At the end of two days, the men were allowed to have baths and were given a slice of bread and a pint of coffee, having previously had nothing more sustaining than cabbage soup. On the following day, after a medical inspection, the men were paraded and placed in cattle trucks for conveyance to Emden.

Among the large number of trawler men captured on August 24th and 25th was a black seaman named William Savory, a native of Barbadoes. This man was pulled out of the truck at every station at which the train stopped on the journey to Emden, and put on the platform for exhibition. Crowds gathered round, insulting and spitting upon the unfortunate man. The journey to Emden lasted from early in the morning until late in the afternoon, during which little or no food or drink was provided. After four days at Emden, the prisoners were again marched to the train and set out on their journey to Sennelager camp. They started in the morning and did not arrive at their destination until early on the following day. No food of any kind was served during this long ordeal.

Before passing on to describe the life to which the seamen were condemned in the prison camps, the treatment of Captain Edward Webb, the master of the *Wartenfels*, at Heligoland may be cited as a further indication of the general attitude of the Germans towards merchant officers as well as their men. The *Wartenfels* was sunk by a submarine

without warning on February 5th, 1917. Within forty minutes, his ship having disappeared, Captain Webb found himself a prisoner on board the U-boat. His ship had been sunk in the early morning, but it was not until seven o'clock in the evening that he was provided with any food, and, although there was plenty on board, he was then given only a small piece of bread, besides a pannikin of water. In the meantime, a junior officer, who had served with the Hansa Line before the war, closely questioned him without result. Having spent the night in the quartermaster's quarters, Captain Webb was roused at one o'clock and again questioned, and on his refusal to answer was told that he would be shot on reaching port, or before that if he caused any trouble. He was charged with acting as a decoy, it being suggested that his ship was heavily armed. He passed eleven days on board the submarine and was then landed at Heligoland and lodged in a cell. Three days later he was placed on board a small steamer bound for Bremerhaven. The weather was cold and he had no overcoat, nor was any food provided. Owing to fog and ice, the journey occupied twenty-six hours. He was then marched to the town jail, searched, and locked in a cell. It was bitterly cold, very little light entered the cell, and the sanitary arrangements were of the crudest character. His bed consisted of a plank; the food was inadequate in quantity and poor in quality.

Three and a half days were spent under these conditions, and early on the morning of the fourth day Captain Webb, in a famishing and weakened condition, was marched with about forty others, mostly fishermen, to the railway station, and entrained for Dülmen. When taken prisoner he had £5 upon him. The Germans deducted one mark for every day he had been kept in prison on the excuse that he ought to pay for his maintenance. Dülmen was reached at six the same evening, and then Captain Webb and his companions, weary mentally as well as physically and badly in need of nourishing food, were taken to a kind of outhouse and stripped, their clothes searched, and they themselves fumigated and given a bath. Though the cold was intense, Captain Webb was kept without a particle of clothing for three hours, and it was while still naked that he was handed an iron basin containing weak oatmeal. His clothing, so wet as to retard his regaining normal circulation, was even-

tually returned to him. The party were then shepherded into a barrack. The weather was frosty and it was snowing. There was no fire in the barrack, and only a few more fortunate prisoners were given blankets, which were in a filthy condition. On the following day Captain Webb was put into a compound where the conditions were more bearable, but the food remained almost uneatable and there was very little of it.

Ultimately, as the result of the policy pursued by the enemy at sea, the number of captive seamen in Germany rose by July 1917 to an aggregate of 2,752, besides seventy-one men held prisoner in Turkey and forty-one in Austria-Hungary. The distribution of the interned seamen between the various camps at this period is shown in the following statement :

Ruhleben	1,503
Altdamm bei Stettin	29
Hameln	19
Dülmen	136
Brandenburg	690
Holtzminde	11
Döberitz	7
Frankfurt a/Oder	1
Soltau	2
Munster	3
Schloss Celle	1
On board ship at Hamburg	1
In hospital at Kiel	1
Havelberg	3
Place of internment unknown	78
Berlin	1
Augustabad—Neu Brandenburg	13
Neustrelitz	3
Karlsruhe	24
Crefeld	1
Heidelberg	19
Gustrow	129
Strohen	22
Beeskow	55
Total	2,752

AUSTRIA-HUNGARY

Grossau	10
Laibach	2
Koprivnica	4
Drosendorf	1
Gratz	3
Salzerbad	16
Deutsch Gabel	4
Place unknown	1
Total	41

TURKEY	
Magnesia	71
	71
Grand Total .	2,864

As the above statement shows, Ruhleben was the principal concentration camp in Germany. It consisted of a race-track with a grand stand and stables. In the stables, the crews taken from merchant vessels and British civilians who were interned at or after the outbreak of war were herded together in the most insanitary conditions. Some of the seamen were placed in the loose boxes and others were sent into the haylofts. Many of them passed the first two months of the incarceration on cement floors at night; the more fortunate secured some straw as a covering, but none had either bed or blankets. Later on, boards were served out to those who had hitherto been sleeping on the cement floors, and wood pulp in sacks was eventually supplied in place of bedding. These conditions as to sleeping accommodation lasted for about twelve months, "when we risked seventy-two days' solitary confinement and made bunks of the boards given to us. These bunks, contrary to expectation, met with the approval of the 'Baron' (the camp commandant). From this time onwards the sleeping accommodation improved."

According to the testimony of many, the prisoners suffered acute hardships during the early part of the winter of 1914, when scores of the men had no alternative but to sleep on the hard bare floors, thinking themselves fortunate if they secured a little straw for covering, for no blankets or bedding of any kind were then procurable. It was only after a considerable interval that the money previously taken from the men was returned by the military authorities, and they were allowed to purchase blankets. No heating apparatus was supplied for some time, and the men consequently suffered acutely from the cold. About Christmas time steam-heaters were introduced, but they were in operation for only two hours in the morning, eleven to one o'clock, and two hours in the afternoon, four to six o'clock; and they were discontinued in the following April.

It would be difficult to exaggerate the discomforts which the merchant seamen experienced during the first year or so of their captivity at Ruhleben. Many of them became seriously ill, some lost their reason, and others died. Though a canteen was started, many of the seafaring men had no money with which to buy food. To physical discomfort was added mental anguish owing to the absence of communications from their homes and nervousness lest any letter going out from the camp, giving a hint of the conditions in which they were living, should bring down upon them further ill-treatment.

Only very slowly were they convinced that the British Government, the British people, and British organisations specially concerned with the Merchant Navy were not unmindful of their hard lot. They felt, as the early days of their captivity passed, that amid all the excitements and anxieties of war they had been forgotten by those to whom they had a right to look for succour. Discussion continued week after week among these miserable victims of the war by sea as to the attitude towards them of the people at home, and all the time the only news reaching them of the progress of the war was untrue, or at least grossly exaggerated, statements made by their captors in the hope of further depressing them. If emphasis is laid on the hard fate of these men who were captured during the early period of the war and interned in Ruhleben camp, it is merely because tribute is due to their unfailing patience and fortitude.

As the war progressed and the population of Ruhleben increased, the prisoners themselves evolved out of a condition of chaos something of order, decency, and even comfort. Their efforts in this direction were supported to the utmost by the British Government and a number of volunteer organisations. The prisoners formed themselves into a self-governing community, with an elected council, and Mr. Powell, a civilian, became Camp Captain, and was largely responsible for the organisation. The system worked so successfully that ultimately the German commandant left the management of the camp largely to the interned men themselves, under the Camp Captain and Council. The Council dealt with finance, supplies, education, amusements, and prison life generally. Seamen and fishermen were encouraged to study navigation and

other useful subjects during internment, and this study was allowed by the Board of Trade to be reckoned as equivalent to three months' service at sea in counting sea service for the purpose of an officer's certificate of competency.

One of the camps which its unhappy inmates will always remember with a shudder was situated at Brandenburg. The officers commanding were harsh and cruel, and the conditions under which the men were accommodated, even as late as the early summer of 1917, were such as to undermine their health. The huts in which they were lodged were badly overcrowded. Though provided with stoves, fires could not be lighted for some time, as no fuel was supplied. "We were kept in barraeks like cowsheds," one man afterwards stated, "overcrowded, beds touching each other, all dark and filthy. We had mattresses filled with wood shavings." Each man was given one thin blanket. The sanitary arrangements were bad; the food was of poor quality, and, though the men suffered greatly from the cold, their requests for clothes went unheeded. Prisoners were employed in making railway trucks, felling trees, and other arduous tasks. Some of them under threats were forced to assist in manufacturing torpedoes. The day's work began at 5 a.m. and the men were kept hard at it until 7 p.m., there being one interval only, from 12 to 1. Sometimes payment was made for labour, but frequently the men received nothing. Some cadets and midshipmen were made to work in the coal mines. The Germans paid little respect either to ill-health or deformity. One old man with double rupture who refused to work was threatened with dire penalties, but at length the Germans gave him an easy task. The sentries appeared to take a delight in ill-treating the men, knocking them about with their rifles and bayonets.

During hostilities isolated facts leaked out as to the brutalities practised at Brandenburg, though it was not until after the signing of the armistice that more complete particulars were obtained. An early and circumstantial statement was made by the master of one of the many British merchant vessels. His sailor-like and unadorned record tells a terrible tale of inhumanity which ought not to be forgotten.

“Slept on floor of officers’ barracks—refused to go in among the men to bunk allotted to me. Another barrack allotted to officers only next day. German issue consisted of bunk of unplanned board—outside of trees half round, bark on—wood full of sap and frost, sack of shavings—two red blankets—eighteen-inch square towel—iron basin (for food)—iron spoon. Rations : breakfast, acorn coffee ; dinner, soup (served in filthy wooden tubs), offal ; supper, ditto and two slices of bread per day. Bunks in barrack all touching—forty-eight in my barrack. We slept, ate, smoked, washed clothes, and later cooked in this one room—alive with vermin. I lived here for five and a half months. Older prisoners helped all they could with food, but I was generally very hungry, and by the time my own parcels of food arrived had lost twenty-eight lbs. in weight. The barrack was built right on the ground of one-and-a-half-inch unplanned boards—covered with tarred felt ; two degrees of frost have been registered inside of barracks in the mornings. We formed parties to scrape refuse heaps for anything that would burn, but this became such filthy business we were bound to give it up and freeze. In summer the heat was intolerable ; flies and mosquitoes very trying.”

The prisoners were used to “advertise” the German victories at sea and thus support the morale of the people of Berlin. A party of them being under orders for transfer in August 1916—after the Battle of Jutland—to Cottbus, a Russian “strafe” camp, the opportunity was taken to parade them through the streets of Berlin as the victims of another German victory. The crossing of Berlin occupied two and a half hours. Some of the prisoners were young and strong, but others were old. Even men of seventy were not spared this ordeal. Their stronger companions assisted them to the best of their ability. These propaganda marches were continued until almost the end of the year, and every week or so a party of British seamen was paraded in this manner in the streets of Berlin.

There were two camps at Cottbus, one of which was turned over to English prisoners, while the other was for the most part devoted to Russians, though some British seamen were confined there. The British prisoners were treated, relatively speaking, with consideration, but they

witnessed heartrending sufferings on the part of the Russians. One of them has left on record distressing memories.

“The unfortunate wretches were lashed to the strafing posts for two hours a day, and in November, when the cold weather set in, it was pitiful to see these world-abandoned creatures fall limp in their lashings, where they would perhaps remain an hour; when untied they would fall on the ground in a limp bundle of rags. I have also seen these Russians pass in pairs as many as ten lines of barbed wire, one holding up the lower wire for the other to pass, and so on, until they came to the British compounds, where they were given the German soup; our men by this time were getting parcels from home. It seems incredible that any human being would risk his life for a basin of German pig-swill soup, yet men were shot in attempting to pass from one compound to another with that object.”

This citation illustrates the brutality exhibited by the enemy towards men whom a cruel fate had temporarily placed at their mercy.

Sennelager camp also became notorious. A reflection of the conditions which existed at this camp was obtained, after the war had come to an end, from a number of seamen, particularly fishermen, who were captured during the first months of the struggle. On reaching the camp, they were lined up in front of the commandant, who proceeded to abuse them as “minelayers” and “swine,” remarking, “I’ll make you cat out of the swill tubs.” Each of the men then had one side of his head and face shaved, a means presumably of distinguishing British seamen from prisoners of other nationalities, but also an expression of a brutal spirit of contempt. “We had to sleep,” one of the sufferers subsequently recorded, “in an open field without any covering of any kind, and we were subsequently moved into a smaller field, where we again slept in the rain. We were told that, if we moved after dark, we should be shot. On the second night we lay out exposed to the rain we were each given a rug.”

Some of the parties of prisoners on arrival were stripped in the streets, although men and women were passing to

and fro. Their own clothes were taken away from them, and each was provided with dungaree trousers, a jacket, and a cap, but no waistcoat. These garments proved quite inadequate during the cold weather. Three or four days afterwards tents were erected, and when they were ready the prisoners were told off to occupy them. Many nationalities were represented among the captives, and the last to be accommodated were the British, some of whom were left to fare as best they could in the open for as long as three weeks. Eventually wooden barracks were run up by the prisoners, and these and the tents were subsequently used for sleeping accommodation.

About Christmas time (1914) fires were provided in the barracks. At first no coal was supplied, and the prisoners had to use as fuel whatever they could find, but subsequently they were given a little coal from time to time. For the purposes of washing, the men had only a long trough such as is provided for cattle for drinking purposes. There was no soap and there were no facilities for baths. As an inevitable result, the prisoners became very dirty and suffered badly from vermin. When a man's condition in this respect attracted the attention of the Germans, he was allowed to have a bath and his clothes were fumigated. The sanitary arrangements of the camp were indescribably bad. "It makes me feel sick to talk about it now," one of the seamen remarked when he was asked to give details.

Both in the camp itself and in the hospital the food was bad and inadequate in quantity, and doubtless these two factors accounted in no slight degree for the ill-health from which the men suffered before parcels began to arrive from England. At first neither letters nor parcels were received, and, in addition to the physical suffering inflicted, the men were subject to a mental anguish which induced periods of depression and threatened to drive many of them insane. They led a hopeless existence, without even such relief as light work might have provided, and the threats of the sentries provided the only variation from the deadly monotony of life.

Details of one incident reflect the barbarous attitude of the Germans towards these men. It occurred in September 1914. "I was bitten by a wolfhound belonging to a sentry who always treated us with great hostility," one man stated. "He deliberately set the dog on me, and the

animal bit me badly on the left leg above the ankle. I had given no provocation for this. I at once reported the incident to the commandant. No efforts were made to dress my wound, which was bleeding, but I was arrested very shortly afterwards and lodged in prison. On my way there a motor-car, containing two officers and two women, met us. They stopped the car and said something to the sentries which I could not understand. The sentries at once knocked my head against the car, much to the delight of the occupants, who shouted out 'Kitchener, Kitchener.' I was knocked nearly senseless and then taken to prison. About midnight four drunken sentries entered my cell, knocked me down and kicked me, shouting out 'Kitchener.' They threw cold water over me and left me. I felt so weak that I thought I should not survive." On the following day, the unhappy man's appeal for medical aid resulted at last in his being taken to a band-master, who also acted as doctor. He had an English wife, and he treated the wound, applying caustic and bandaging it. On the following day this seaman was taken before the commandant and charged with having spoken to an English soldier, which was untrue. The commandant sentenced him to be tied to a tree for four hours a day for a week. The victim asked that he might be shot out of hand when he realised the ordeal to which he was to be submitted. The sentence was, however, carried out. The man was tied up every day for a week, two hours in the morning and two hours in the afternoon. At the end of the week he was so exhausted that he could hardly stand and he was also unable to sleep. Fortunately Captain Roberts, of the R.A.M.C., who was also a prisoner, gave him some tabloids which brought relief from the pain. The wound in the leg was slow in healing. This brutally ill-treated man was confined to bed in the camp hospital for some time. One drug of a yellowish colour served as medicine for all purposes in this institution.

To this camp came the coloured man Savory, whose earlier ill-treatment has already been described, and he became the special object of the sentries' brutality. After his return to his home at Grimsby, Savory gave an account of his experiences. He was taken ill with pneumonia in February 1915. He contracted the illness while sleeping in a canvas tent in the cold which then prevailed. On

coming out of hospital, he was first employed in potato peeling, and then had to rub down prisoners suffering from vermin with a strong soap, which removed the skin from his own hands and also from the bodies of the men. Eventually the commandant arranged for baths to be provided, and the clothes of the seamen, which were by this time little better than rags, were fumigated. Savory, having revealed the fact that he understood French, was then employed as an interpreter to accompany French prisoners while they were working.

“They used to leave the camp at 5.30 a.m., taking food with them; this consisted of a small piece of sausage or two pickled herrings or a piece of cheese. They walked seven kilometres to their work, which consisted of preparing land for planting vegetables. The prisoners worked, with intervals, till 2.30 p.m. They then returned to camp and received their dinner, a pint of soup. After four days I refused to go on with the task as I was suffering from want of food. I was tried by the commandant of the camp for this refusal. He ordered me to be punished by having a load of bricks placed on my back and being made to hold one brick in each hand for four hours every day for a week. But this punishment was never carried out owing to my weakness. I was sent to the doctor, who treated me kindly and sent me to barracks, and I was not made to do any more work.”

The “brick ordeal” was a favourite one with the Germans at this camp. One man described it as consisting in making a sling to hold half a dozen bricks, which were then placed on the back of the victim. He was compelled to carry a brick in each hand. Thus weighed down he had to run round a post for two hours. He was permitted to rest after an hour, and then once more resumed his monotonous and cruel ordeal. In some cases this treatment continued for several days.

Something must also be said of the camp at Hameln. Here seamen and others were supplied with a bed of shavings, two thin blankets, one tin spoon, and one small bowl, which had to serve for the purposes both of feeding and washing. The quarantine barrack was built above the ground and enclosed by barbed wire. The barracks

were dry and bunks were provided. Everyone was inoculated six times and vaccinated once. Officers and men had to strip naked in one room and were examined for vermin. Very little fuel was served out to enable the rooms to be heated. The food was brought into the barracks in a wooden tub, no distinction being made between officers and men. The first meal of the day, which was available at 6 a.m., consisted of cocoa or tea or coffee substitute and inferior salt fish, with four potatoes twice a week, which when distributed enabled each man to have one and a half tablespoonfuls each. Occasionally small fresh fish were supplied in place of salt fish. Soup was supplied from time to time; it was made from rice dust, fusty meal, bran, potatoes, good or bad, and a miscellaneous assortment of vegetables. Once a week a soup was served, the ingredients of which were unrecognisable. One merchant officer, on his return home, recorded that "all the food had a horrible smell and a nauseous taste; hunger became so keen that I tried to eat it, but I could not retain it, so I had for many days to live on my half pound of bread and water." No one except the guard was allowed to approach the merchant seamen prisoners, but British soldiers—in an adjoining compound—used to watch for a favourable chance and throw additional food over to them. After about a fortnight—March 15th–30th, 1916—this particular party of men were permitted to come out of quarantine, and the men were separated from the officers, being shifted to another barrack. The officers thus obtained a larger measure of freedom, but the food was still bad and inadequate. No actual physical violence was done to the officers afterwards, but they, like the men, suffered many petty annoyances.

The German guards at the Lübeck camp treated the prisoners as criminals. A docks shed was used for them. They were employed at stevedore work, loading and discharging vessels, which brought cargoes of iron, spelter, saltpetre, and paper from Norway, Sweden, and Denmark. These ships were loaded on their return journey with dyes, salt, iron manufactures, and cement. In theory the men who did this work were each paid four marks a day, but one mark was deducted for food, one for accommodation, and one for clothing, although no clothing was supplied.

"I had nothing but the pair of trousers and the singlet in which I was captured," one of the *Möwe's* victims stated, "and nothing to protect my feet, which, of course, had become very sore." The men had little of which to complain whilst in the dock shed, but while working on board the ships the guards treated them brutally, often hitting them with the butt ends of their rifles in order to make them work harder. Work started at 4 a.m. and lasted until 8 p.m., with an interval of only one hour in the middle of the day.

That the attitude of Germany towards merchant officers and men continued to be cruel even as late as the last month in the war is revealed in the simple but eloquent account by the master of the s.s. *Jumna*, Mr. J. S. Wickman, of the experiences of himself and other prisoners landed in Germany after the return of the raider *Wolf*. They were taken ashore at Kiel on March 1st, 1918, to be entrained to Karlsruhe, which was the sorting station for prisoners, and thence to Heidelberg on a cold raw morning; snow was falling and the ground was covered to a depth of two feet. Mr. Wickman's statement continues:

"From Heidelberg we were moved—when I say we, I mean the majority of the *Wolf's* officer prisoners. It seemed we were being 'strafed' for something that the prisoners on board the *Igotz Mendi* had said on arriving in England.

"We landed in an out-of-the-way place among bogs and swamps, called Uchtemoor Paurburg, marched for about six miles, and eventually landed in a deserted camp. This place was in charge of two petty officers, who did not know anything about us, and after a harangue decided to let us inside the double-barbed wire barricades. It had been a 'strafe' camp for Tommies, and it was in a most insanitary condition. The food we received in this camp just kept us alive. About half a pound of black bread, two cups of acorn coffee, and a plate of Russian black pea soup per day. The drinking water we had from a pump in the centre of the camp, which was very bitter and tasted of a mixed assortment of decayed vegetable matter. If left standing at night until morning there was quite a thick sediment and a coating of oil. After

protesting and kicking up several rows, we had orders to quit for the Hartz Mountains. They intended making 'canaries' of us now.

"In Uchtemoor huts, our beds were composed of sacking filled with tough heather, and the covering just the ordinary army grey blanket. After eight to ten days of starvation and growling, we were up bright and early one morning and marched through the swamps back to the small side station at Uchtemoor. Glad to bid farewell to this desolate, hungry camp, we were in high spirits and sang our way back amidst the scowls of the village inhabitants.

"We arrived at Clausthal, Hartz Mountains, after a couple of days in small, wheezy trains, stopping at several stations *en route*. . . . On our arrival at our last camp, we were met by the noted commandant, one of the 'blonde beasts' of *Daily Mail* fame. He was a suave, oily, persuasive liar and bully. There was nothing too mean for him to do, regarding the annoying of English officers under his rule, but for all that they all just got their own back one way or another. His brother was in command of another camp close by, and they used to vie with each other to see who could get most officers in the 'jug' for trivial or no offences. He was known as 'Mad Harry,' and was supposed to have been a commercial traveller in the United States and came across disguised as a parson. He was quite proud of the notice he was attracting in the British Press.

"We put in our time in this camp with study, games, concerts, tennis, and golf. We had three famous bands from the prisoners, and a good lot of amateur actors and singers. Up to the armistice we had a rough time with 'Mad Harry,' but from then he was removed, and a new commandant came who was a 'sport.' We had it practically all our own way and could do no wrong, for the Germans deemed it advisable to shut their eyes to some of the escapades that went on."

It would be wearisome to describe the treatment of British merchant seamen in all the various camps. The regime varied, but generally the men fared badly in the matter of accommodation and food, and, even when they were not ill-treated physically, they were exposed to contemptuous conduct which was obviously intended to

lower their morale. The monotonous character of the existence of large numbers of these men was relieved by no facilities for employing their time and they were debarred from organising recreations. It is doubtful, indeed, if prisoners who managed to keep body and soul together on the unpalatable and even uneatable food served out in small quantities by the Germans were in a condition to join in any recreations. At Dülmen camp, for instance, in the spring of 1917 the staple of the dietary consisted of a loaf of bread which had to serve the needs of ten men for twenty-four hours. The bread was what is known as "black bread," but under the war conditions it had become sour and bitter. Twice a day soup was provided which consisted of turnip water, and in the morning the men were permitted to have a cup of Ersatz coffee. The Germans appeared to be principally interested in innoculating the men, as apparently they feared that infection in the camps might spread among the guard and thus seize the civil population. In a comparatively short period, British merchant seamen were inoculated six or seven times. Apart from this too solicitous attention to the risk of epidemics, the Germans in the main regarded with indifference the various sicknesses from which the men suffered. The fate of a young seaman who lost the sight of his eyes owing to want of attention is merely illustrative. He was at Sennelager camp, sleeping under canvas, when his eyes became inflamed. The doctor admitted that his condition was bad, but said that he could do nothing in the matter, merely recommending the unfortunate man to keep out of the cold winds. The pain became more intense and he again applied to the doctor, and was again rebuffed, being told not to bother him again. In a short time, this man completely lost his sight, and, blind and forlorn, he was at length permitted to return to his home.

One of the first institutions to send parcels of food and other necessaries to the men in the camps was the Imperial Merchant Service Guild. This institution started a War Fund for the provision of food, blankets, boots, tobacco, cigarettes, and other comforts not only for its own members but for all the captains and officers of the Merchant Service who were known to be in Germany. In addition, the wives of many of these officers—women

who were trying to keep their homes together on the small allowance then being made by the Government—were assisted by regular allowances during their husbands' absence. The Mercantile Marine Service Association and the various Engineers' Societies, as well as other organisations, also bestirred themselves in the interests of these men. The wife of Rear-Admiral Reginald Neeld (she was Lord Fisher's daughter), who, while at one of the German spas at the beginning of the war, had suffered at the hands of the enemy, devoted herself to this work on returning home, raising a large sum of money among her friends and converting her home into a parcel-packing and parcel-distributing centre. The British and Foreign Sailors' Society and the Red Cross Society also took a notable part in the same humane movement.

After a time it became apparent that, while some of the prisoners were receiving parcels from several different sources, others were obtaining none. In order to place the work on a more satisfactory footing and to prevent overlapping, an important movement was initiated. The Government had already, early in 1916, appointed the Inter-Departmental Committee on Prisoners of War with Lord Newton as its first Chairman, and both the Central Prisoners of War Committee and the Prisoners of War Department came into existence in the following autumn. It was the Central Prisoners of War Committee which, in December 1916, assumed the control of the dispatch of supplies. The arrangement adopted was that, on the news of the arrival in Germany or other enemy country of a British prisoner of war, the Central Prisoners of War Committee saw that he was added to the list of one of the Associations or Care Committees, and that food and clothing were sent regularly. Owing to the close relations existing between the British Red Cross Society, the Central Prisoners of War Committee, and the Red Cross Societies in Switzerland and Denmark, it was possible to arrange for the dispatch of food to each prisoner who arrived at an internment camp. To each officer and man of the Mercantile Marine were sent 16 lbs. of bread or biscuits and 60 lbs. of other food every four weeks, the same quantity as was supplied to military and naval prisoners. Officers of the Mercantile Marine had the same privileges as the officers of the Army and Navy, and their

relatives could, in addition to the above scale, send 40 lbs. of food every four weeks, either direct from their homes or from an authorised shop. Men of the Mercantile Marine, being classed as civilians, could receive, under a permit system, 22 lbs. of additional foodstuff every four weeks from their relatives. Many shipowners sent extra parcels to interned crews. Cash allowances were provided by the British Government, and issued by the British Help Committee to men in Ruhleben who had no means.

The work of forwarding parcels was carried out under this new body in face of considerable difficulties, since news of captures came to hand irregularly and in haphazard ways. From an early period in the war many inquiries were received by the Board of Trade as to the whereabouts and well-being of individual officers and men, and the Marine Department of the Board prepared and printed a list of members of the Mercantile Marine, and of fishermen, who were interned as prisoners of war, with their place of internment. Provision was made for correcting this list from day to day, and the Board of Trade were gradually enabled, by working in close co-operation with the Central Prisoners of War Committee and the Casualties Branches of the Admiralty and War Office, to create an intelligence organisation. In course of time, the Department received with little delay news of all officers and men captured, as well as the camps to which they were sent. Such information was immediately conveyed to shipowners, relatives, and others concerned.

The condition of captivity without employment inevitably tends to moral deterioration. It was in recognition of this fact that, at an early stage of the war, the Prisoners of War Book Scheme was organised by Sir Alfred Davies, of the Board of Education, and placed under the management of a Committee on which the Board of Trade and other Departments concerned were represented. The object of the scheme was to send books, chiefly of an educational character, to all British prisoners of war in enemy countries, whether men of the Army, Navy, Mercantile Marine, or ordinary civilians, and to encourage definite courses of study. It would be difficult to exaggerate the value to the prisoners of the books which reached them, and of the educational arrangements which it was possible to organise on the assumption that all books needed would be avail-

able. Thus, at the camp of Ruhleben, a library was built up of about 20,000 volumes, mainly books on educational and technical subjects.

The condition of officers of the Merchant Service was later on improved by "officer" treatment being secured for them. The Board of Trade communicated with the shipowners concerned, many of whom promised to bear the expense, and the German Government was informed that, in order to ensure the same treatment for officers of the Mercantile Marine as was accorded to naval and military officers, a payment of eighty marks a month for junior, and 100 marks a month for senior officers would be made. After the 1st September, 1917, this "subsistence charge" was entirely borne by the Government, as it was felt to be unfair that some shipowners should pay, while others did not. These arrangements resulted in improving the conditions of Merchant Service officers in Germany very considerably.

Soon after this arrangement had been concluded, German Camp Commandants began to question the right of some Mercantile Marine officers to officer treatment. As German officers took away every British officer's papers on captivity, he was unable to produce proof of his rank, and without this proof he was liable to removal to a men's camp. To obviate this, the Board of Trade drew up lists of certificated and other officers, which were sent to Germany, and guaranteed that the inclusion of a man's name therein was conclusive evidence of his officer's rank. Wireless operators, surgeons, and pursers were entered in these lists for the purpose of securing officer treatment for them.

Under The Hague Agreement cadets and apprentices should have had the privileges of "youthful prisoners," but the Germans disregarded that humane provision, and forced some of these boys to work with men in Lübeck Docks.

The Government took other active measures to ameliorate the lot of merchant seamen prisoners, and others. The House of Lords, sitting as a Court of Law, had decided in the case of *Beal v. Horlock* that owners of ships captured or sunk by the Germans could not be held legally responsible after the loss of the ship for the wages of the officers and men serving on board the vessel and taken prisoner by the enemy. This decision operated harshly, for the men

were earning nothing during internment. The Board of Trade, in a circular letter to shipowners, recommended that wages, either whole or in part, should be paid to interned crews. Many shipowners had been doing this of their own free will, and most of the others responded to the suggestion. This action freed the men from anxiety regarding their ultimate financial position, and also lightened the burden of their imprisonment.

Early steps were taken to make provision for the dependents of interned men. It was arranged between the Board of Trade and the War Risks Associations that a monetary allowance of either half wages or £1 a week, whichever was less, should be paid to an officer's or seaman's wife or dependents. In 1917 it was decided that the then existing scheme of compensation allowance to wives and dependents of officers and men who had lost their lives should be made applicable to the wives and dependents of interned officers and men; and they were allowed to have the higher of the two scales—either this compensation scheme allowance or the former allowance of half wages or £1 a week. The compensation scale benefited the officers, especially those with families, in view of the allowance made for each child. Some shipowners continued to pay voluntarily either the whole or part of the allowance they were previously paying to the dependents of the interned.

The general question of an exchange of the civilian prisoners in Great Britain and Germany was considered from time to time, but it was decided by the British Government that Germany would gain so much by adopting the principle of "all for all," on which the enemy laid stress, that such an exchange could not be effected. The German Government would not agree to an exchange of man for man, and, apart from that, the German Government regarded British Merchant Service officers and seamen who were taken prisoner after the submarine warfare began as combatant prisoners of war, and refused to include them among civilians. Under the Agreement of 1915, British and German seamen over fifty-five years of age were to be repatriated, but officers of the Mercantile Marine—German and British—were excluded, as it was considered undesirable at that time on military grounds that German ships' officers should be repatriated.

The Board of Trade concentrated their efforts when

exchange proved impracticable on improving the conditions of officers and men in Germany, and securing the repatriation of those Merchant Service officers and men who were entitled under the existing agreement to release as civilians over fifty-five years of age, or as invalids. The German Government was willing to consider Merchant Service officers and seamen and fishermen captured at the outbreak of war as civilians, and about 300 of these were repatriated ; but officers and men captured after the opening of the submarine campaign were regarded as in another class. With regard to invalid officers, a proposal was made by the British Government in 1916 that they should be repatriated if unfit for military service, but the German Government raised a number of side-issues, and no agreement resulted.

Some Merchant Service officers and men were released from Germany, generally on the ground of ill-health, for internment for the remainder of the war in Holland or Switzerland. In these cases, the British Government arranged for the provision of suitable board and lodging and for the payment of small monetary allowances for the purchase of extra comforts. Officers were allowed sixty florins (£5) a month, and men received twenty florins, as a free allowance, and an officer could have a further allowance of sixty florins a month under guarantee of repayment ultimately.

As to the merchant seamen detained in other enemy countries, comparatively few were interned in Austria-Hungary—less than fifty in all. The British Government pressed for the repatriation, or at least the removal to Switzerland, of those over fifty years of age, or invalids over forty-five years of age, but the armistice was signed before any settlement had been reached. The number interned in Turkey was larger, and conditions there were very bad. The majority of the letters and food parcels sent to Turkey did not reach the prisoners, whose sufferings were heartrending. Attempts were made to get most of them repatriated under the Repatriation Agreement, but they were not released until the armistice.

As soon as the armistice was signed, prompt and vigorous action was taken by the Inter-Departmental Committee on Prisoners of War, who appointed a sub-committee to work out the details connected with getting British prisoners of war out of enemy countries. In spite of all the difficulties

caused by disorganisation in Germany, scarcity of shipping, and other transport difficulties, the prisoners were brought home within a very short time. Arrangements were made for the men to have a free passage from Copenhagen, Rotterdam, or other port to a port in the United Kingdom. On arrival they were conveyed to Reception Camps at Ripon or Dover, where they were looked after by representatives of the Board of Trade. They were medically examined, and were given clothing and meals as necessary. Officers also received a sum of £3 and a first-class railway warrant to their homes, and seamen received £2 and a third-class railway warrant. Any officers or men who were suffering from illness were sent to a military hospital.

After his return any master, officer, or seaman whose ship had been damaged or sunk by enemy action, and who was in consequence taken prisoner, could receive, on application, one month's wages from the Board of Trade, without prejudice to any payment made by shipowners. This month's wages did not apply to men serving in vessels which were in German ports at the outbreak of war, and which were detained, and the men interned by the enemy. Further, the Board of Trade paid compensation to officers and men of the Mercantile Marine who lost their effects when the ship in which they were serving was sunk or damaged, and they were captured and interned.

Those seamen who were unable to obtain employment on return from captivity, by reason of injury or illness due to internment or other war risks, became eligible for compensation under the Government War Risks Compensation Scheme. Others who, though suffering from no disability, failed to find work were in most cases entitled to the "out-of-work" donation under the scheme in force to meet unemployment resulting from demobilisation or cessation of war work.

CHAPTER XIII

THE FAILURE OF THE SUBMARINE

WHEN at the conclusion of the war the First Lord of the Admiralty (Sir Eric Geddes) declared that the submarine had been mastered, he was indulging in no empty boast. His statement was supported by statistical evidence which was unassailable. The Allies' position at sea would have steadily improved if the war had lasted a few weeks longer. A number of measures devised by the Naval Staff were only just becoming effective, as, for instance, the great mine barrage in the North Sea ; the convoy system was daily working with greater success and increased immunity from sinkings was being experienced ; and new ships were being launched in volume far more than sufficient to make good the losses due to enemy action.

There were times, it is true, when it seemed as though the intensive submarine campaign might succeed. The enemy's decision to use submarines against merchant shipping was in the nature of a surprise. Never before had submersible vessels been employed for attacking defenceless commercial vessels, manned by officers and men unskilled in the arts of war, though the possibility of such a development had been discussed during the months which immediately preceded the outbreak of hostilities. There was no conception that any Power, in however desperate straits, would not merely ignore the recognised principles of international law as they applied to naval warfare, but would disregard customs of the sea which for centuries had been considered a binding code of honour by seamen of all nations.

Germany in her extremity, to which the silent pressure of the Grand Fleet had brought her, turned to the submarine. When the early hopes of success were falsified, she challenged neutral opinion by ignoring all the restraints which belligerents had hitherto respected in dealing with

merchant ships. The British naval authorities were taken unawares by this recourse to methods of barbarism, with the result that the British Merchant Navy was found defenceless, but not more defenceless than the merchant marines of other countries.

When the enemy began to develop this new form of naval warfare, officers and men of the British, Allied, and neutral merchant navies were thrown on their own resources. They were called upon to defend themselves as best they could. The attack fell with most intensity upon British ships, for nearly half the commercial vessels afloat were under the British flag. As the months passed and men had their ships sunk under them time and again, it became apparent that patriotism was not enough; seamanlike skill was not enough; indomitable courage was not enough. These qualities required adequate material support at a moment when the demands for munitions of all descriptions by the armies overseas, as well as the Grand Fleet, were insistent. In face of many embarrassments, the British naval authorities applied themselves to the study of all the associated problems which the action of the enemy had created, and provided means of defence as rapidly as they could. Gradually the confident hopes in which the Germans had indulged were brought to naught. Merchant ships were armed and their crews trained in the use of lethal weapons. The Auxiliary Patrol, that incomparable force whose record of achievement will never be forgotten, was strengthened and gained in experience. The Admiralty developed a variety of auxiliary services for hunting down submarines, and devised mining schemes on a scale hitherto unknown.

In these circumstances, the submarine was mastered; but if the officers and men of the Merchant Navy had not exhibited powers of endurance beyond anything known in the history of the sea, defeat would have come to the Allies. Their armies would have been without essential sea-borne reinforcements of personnel and necessary replenishments of munitions, and the civil populations behind the lines would have been brought to the verge of starvation. Nor could the hastily mobilised armies of the United States have been transported across the Atlantic, mainly in British ships.

The British merchant seamen held on with incomparable

devotion until at last the plans of the naval authorities began to take effective shape, and then the clouds steadily lifted. In the year 1916, the loss of British shipping from enemy action, submarines, mines, and cruisers amounted to 1,251,536 tons, and the world-total reached 2,327,326 tons. The destruction of British shipping in the following twelve months amounted to 3,751,529 tons, the world-total being 6,235,878. The outlook was black. As this year drew towards its close, it became evident that the defensive and offensive measures of the naval authorities combined with the undaunted spirit which was being exhibited by the merchant seamen, were having their effect upon conditions at sea. With fluctuations from month to month, the losses of merchant shipping steadily declined. Whereas in April 1917 no fewer than 551,202 tons of British shipping and 881,027 tons of world shipping had been destroyed by the enemy, a year later the corresponding figures were 215,784 and 278,719 respectively. The toll of the succeeding months continued to shrink, until in the month of October 1918 the British Merchant Navy was deprived of only 59,229 tons, the world-total being no more than 118,559 tons.

At the same time steps were taken for speeding up the shipbuilding output, with the result that, in the third quarter of the year 1918, the accession of British ships to the Register nearly equalled the losses by sea, and in the month of October the launchings were 144,000 tons as compared with losses of 59,229 tons. Nor were British shipyards only concerned in this remarkable production campaign. The United States was beginning to assist materially in adjusting the balance when the war came to an end. In the second and third quarters of 1918, the output of new ships on the two sides of the Atlantic for the service of the Allies far exceeded the total losses—2,627,000 tons as compared with 1,562,489 tons—and in October ships of 511,000 tons were launched, and vessels of only 118,559 tons, British, Allied and neutral, were destroyed by enemy action. By these various and skilfully co-ordinated measures the intensified submarine campaign, to which at last the enemy had devoted every available resource, was brought to overwhelming defeat.

Once more the silent pressure of sea power proved conclusive in the issue of war by land as by sea, for in this

long struggle the sea once more controlled the land, and, the issue at sea having been decided, the issue on the land was decided also. Merchant seamen, untrained in the arts of war, were forced into the forefront of the greatest naval struggle of which history holds any record and they shared in the triumph. They were submitted to an ordeal without precedent and they emerged conquerors—at a price. A heavy toll was paid, but the men of the Merchant Navy never faltered in performing the service which the enemy forced upon them. When in future years historians, taking a wide survey of the world struggle, debate as to who won the war, they cannot, in face of the part which the British Merchant Navy took in the contest, refuse a wreath of memory to British merchant seamen of all ranks and ratings.

What shall be said in final summary? When the submarine war is described, as it has necessarily been described in these pages, as a daily succession of events, the impression left is inevitably disorderly and confusing. It would seem as though the campaign consisted in the daily sinking of merchantmen which had little means of resisting, or in the hairbreadth escapes of others which had a chance of escape, though never a very good one. The impression is not altogether misleading—for the daily life of British merchantmen, especially during the early months of the campaign, was often enough an alternation of escape and disaster. But the impression, in spite of its intrinsic accuracy, is partial only. The submarine campaign, outwardly a succession of tragedies and disasters, followed a regular strategic law in its opening phases, in its development, and its close.

In any operation or campaign, whether it be waged by land or sea, the party which is attacked must know certain things if he is to defend himself. He must know the point of attack in sufficient time to bring up forces for its defence; failing that he must have every possible zone of attack covered by forces at least equivalent to those which may be brought against it. When in 1915 the campaign against merchant shipping began in earnest, the zone of attack was wide, for it extended all round the British islands; but the attack was not in any sense concentrated; on the other hand, the data essential to a successful defence were entirely lacking. It was known

that the enemy, the extent of whose resources was a matter of doubt, was paying special attention to the entrance to the Thames and the coastal routes ; but the place and moment of a particular attack against a particular merchantman were not only unknown, but incalculable. There was no means of ensuring an encounter between the defending and attacking forces ; the defence consisted of chance meetings between U-boats and patrolling vessels.

As the problem of investigating the enemy's movements and intentions with the same degree of precision that a general observes the approach of an opposing army seemed impossible of solution, the naval authorities attempted to cover every vulnerable point. The destroyers and auxiliary patrol craft allotted to the coastal areas into which the shores of the British islands were divided, represented a first line of entrenchments erected along the most probable zone of attack. But it is a law of war that, if any system of entrenchments or fortifications is to be held at all, the force holding it must not fall below a certain average density, which technical experts can calculate. The line of protective ships scattered round the British islands was so thin that this condition was not fulfilled, and, if the technique of the sea and land warfare only differed in regard to the rapidity with which forces move from one point to another, then the war at sea would have been won by Germany, when her submarines first established themselves upon the approach routes to the British islands and the naval forces failed to dislodge them.

This in itself was, however, not sufficient. The enemy had to do more. A strategical or tactical position is lost when the forces that hold it lose not so much the place itself as the use of the place. In land warfare, use and physical possession are so closely connected that the two are always considered together ; in sea warfare the matter is rather different. An enemy cannot be deprived of the use of a line of maritime communications merely by stationing warships upon it. This end is attained only when warships have stopped all the traffic which ordinarily passes along it.

It was this essential condition of success which the German submarine commanders found so difficult to achieve. The maritime traffic of the Allies never ceased

to flow along the routes the enemy watched and patrolled ; the armies in the various theatres were never without reinforcements of personnel and munitions ; the civil populations, though sometimes they were short of supplies, never starved. The seas were kept open. The sinkings of heavily laden ships made a difference to the total volume of traffic ; they made little or no difference to the movement of shipping except for a few weeks of exceptional danger.

It would be impossible to lay too much emphasis upon this extension or augmentation of German difficulties. It was this protracting of the business, the delay of victory, which gave the British naval authorities time to take effective counter-measures. And what was the cause or reason ? Certainly not the few weak guns which were hastily mounted in a proportion of merchantmen ; certainly not the masses of auxiliary craft which could never dislodge a single submarine for more than a few hours at a time, and which never succeeded in destroying more than two or three U-boats a month ; certainly not the dazzle-painting of ships which disguised their movements in the most ingenious fashion ; certainly not the minefields laid with so much energy. All these measures contributed to victory, but they were not conclusive. The source and origin of the enormous increase in German difficulties was the unbreakable spirit of the captains and men who sailed into danger without flinching or complaining. Each one of them was hot with the glowing, abiding anger of a peaceful man who has been ordered to leave the footpath by a ferocious ruffian. They might suffer grievously, but they would never give voluntary acquiescence to such an order. Military history is full of cases in which the burghers, the women and children of a beleaguered town have assisted the garrison, and made a protracted resistance possible. It was exactly this service that the merchantmen performed during the first three years of the submarine war. They insisted, in face of the enemy, upon using the commercial highways of the seas, and challenged all the efforts of the enemy to expel them. This is what gives the long list of daily sinkings an outstanding significance in the history of sea warfare. Men lost their ships only to return ashore to man other ships. It constitutes the daily journal of a struggle for a strategical position

that was breached and menaced a thousand times but never abandoned. But the analogy is only accurate in a strictly strategical or military sense. The burghers of a beleaguered city at least fought side by side with the men at arms ; the officers and men of the Merchant Navy had to resist an enemy of overwhelming strength alone and unaided, in the outer wastes of the sea, for the most part out of sight of the King's ships.

The naval authorities continued to seek for a solution of their problems on strictly orthodox lines, and their measures, ingenious as they were, met with partial success—but partial success only. Great hopes were at one time focussed upon a piece of mechanism called the hydrophone. It seemed as though this subtle and delicate mechanism would satisfy the first condition of a military equation, hitherto unsoluble. Knowledge of the enemy's movements and intentions, obtained on land by outpost troops, cavalry screens, and aeroplanes would be collected from sound waves—harmonic movements of ether. It was only when this device, and all its derivatives, had been found wanting in some measure, that the authorities went back to their first solution of adequately covering every point of attack. They erected this permanent cover to the position that had been held for so long by the merchant seamen by introducing the convoy system. That system was equivalent to a line of fortifications erected along the essential communications of the British Empire. The enemy never so much as breached the line.

On what, in the last analysis, did the success of the convoy system depend ? It was a matter of seamanlike discipline—the sailing in company of many heterogeneous vessels, with different speeds and different turning circles. When the merchant captains were approached upon the subject of introducing ocean convoy, they answered that the thing was impossible. They could not do it. They and their ships were ill-fitted for such a system. This was the considered judgment of men who had lived in danger of death for more than three years, and had never deserted from their posts of danger. The answer of the naval authorities, confronted with a situation that justifiably occasioned grave alarm, was that it had to be tried and that they relied on the merchant seamen to attempt what they regarded as impossible. Just as the protraction of

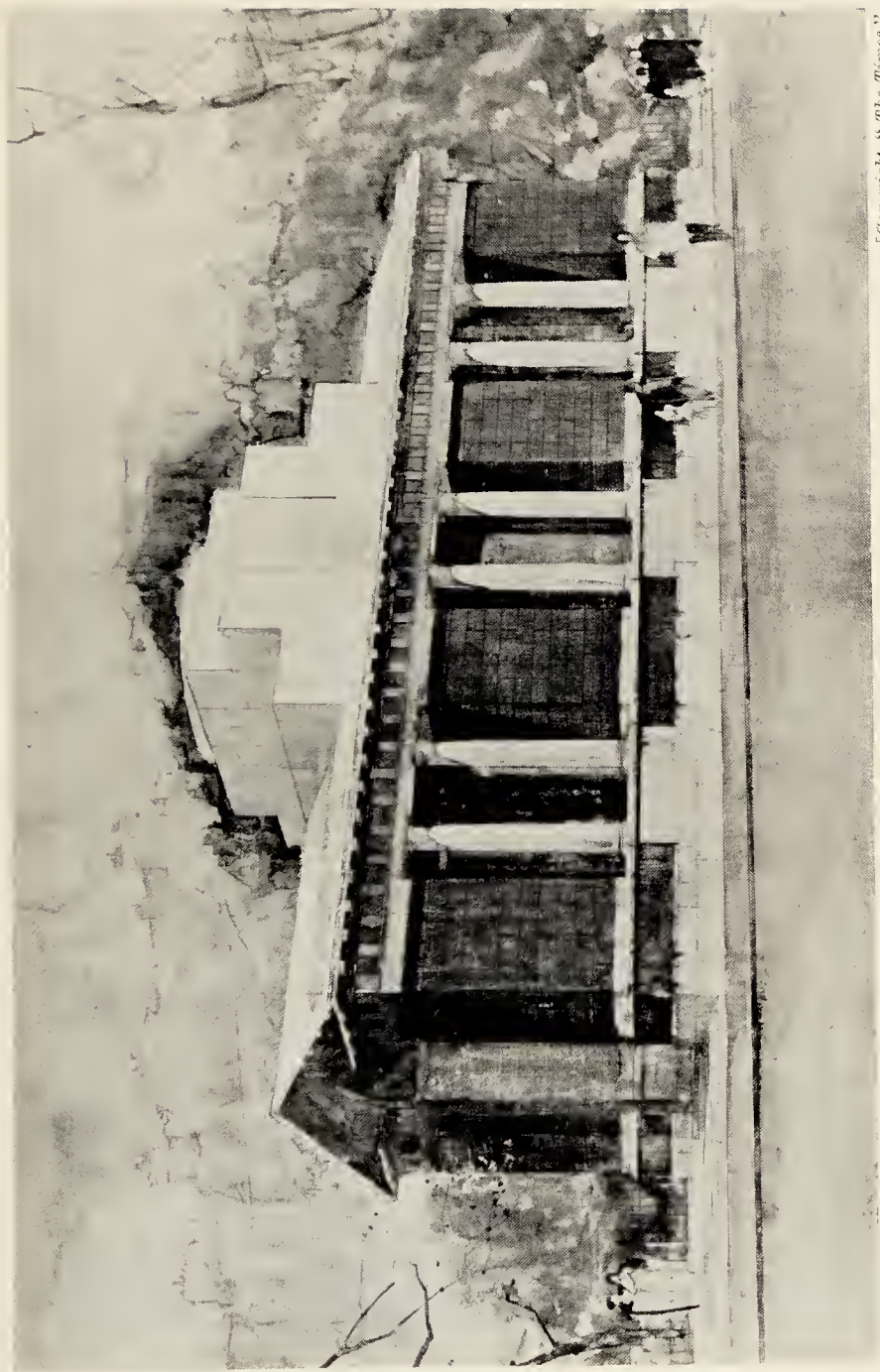
the submarine campaign, and all that the protraction meant to the naval authorities in enabling them to develop defensive and offensive measures, was effected by the dauntless courage of the Merchant Navy, so the sources of the final ruin of the enemy's hopes can be found only in a collective act of energy and endurance which defied the experience of the merchant seamen themselves.

The success of the convoy system proved the undoing of the enemy. The merchant seamen, doubting their own powers to keep station and to respond instantly to every order of command, justified the confidence the naval authorities had placed in them. The immunity of sinkings of ships under convoy was the last phase in the triumph of the Merchant Navy. It was a co-operative measure of scientifically applied energy, seamanlike skill, and unconquerable endurance. Against such a combination the enemy was powerless. The convoy system constituted the last chapter in the history of a struggle which tested—as it had never before been tested—the whole British Merchant Navy; its organisation ashore; its ships, and its officers and men.

Though millions of tons of shipping were sunk and thousands of seamen made the great sacrifice, the Merchant Navy survived, and the Allied cause which it had supported for more than four years was at length saved. Of every man who died at sea that the people of these islands, the populations of the Empire, and the inhabitants of Allied countries might live, it may be said, as it was said of Hawkins:

“The waters were his winding-sheet, the sea was made his tomb,
Yet for his fame the Ocean sea was not sufficient room.”

The men of the Merchant Navy in the ordeal by sea in the years of the Great War created new and lofty traditions of national service, which they have handed on to their successors as a rich heritage. The history of the part which British merchant seamen took in the world-wide struggle of 1914–18 may well be the chart and compass of the men who in future years will be called upon to man British ships in war or in peace.



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THE MERCANTILE MARINE MEMORIAL ON TOWER HILL.

APPENDIX A

UNITED STATES GOVERNMENT REGULATIONS FOR THE CONDUCT OF ARMED MERCHANT VESSELS

1. ARMED guards on American merchant vessels are for the sole purpose of defence against the unlawful acts of the submarines of Germany or of any nation following the policy announced by Germany in her Note of January 31st, 1917. Neither the armed guards nor their arms can be used for any other purpose.

2. The announced policy of Germany, in her Note of January 31st, 1917, to sink all vessels that enter certain areas of the high seas, has led the Government of the United States to authorise armed guards on merchant vessels to resist any and all attempts of the submarines of Germany or of any nation following the policy announced by Germany in her Note of January 31st, to put that policy into practice.

3. It shall be lawful for the armed guard on any American merchant vessel to fire upon any submarine of Germany or of any nation following the policy of Germany announced in her Note of January 31st, 1917, that attempts to approach, or lies within 4,000 yards of the commercial route of the vessel sighting the submarine, if the submarine is sighted within the zone prescribed by Germany.

4. No armed guard on any American merchant vessel shall fire at any submarine that lies more than 4,000 yards from the commercial route of the vessel sighting the submarine, except that the submarine shall have fired first.

5. No armed guard on any American merchant vessel shall take any offensive action against any submarine of Germany or of any nation following the policy of Germany announced in her Note of January 31st, 1917, on the high seas outside of the zones prescribed by Germany, unless the submarine is guilty of an unlawful act that jeopardises the vessel, her passengers, or crew, or unless the submarine is submerged.

6. No armed guard on an American merchant vessel shall attack a submarine that is retiring or attempting to retire either within the zone or without the zone prescribed by Germany, unless it may be reasonably presumed to be manœuvring for renewal of attack.

7. In all cases not herein specifically excepted, the armed guard on American merchant vessels shall be governed by the principles of established international law and the treaties

and conventions to which the Government of the United States is a party.

8. American merchant vessels are forbidden to pursue or search out the submarines of any nation or to engage in any aggressive warfare against them.

9. American merchant vessels shall make every effort compatible with the safety of the vessel to save the lives of the crew of any submarine that may be sunk, or that submits, or is in distress.

10. American merchant vessels shall make every effort to avoid the submarines of Germany and of any nation following the policy of Germany announced in her Note of January 31st, 1917, while in the zones prescribed by Germany.

11. American merchant vessels shall display the American colours continuously at sea.

12. American merchant vessels should communicate with the commandant of the naval district before leaving a United States port to make sure of the latest information.

13. The safety of American merchant vessels requires that they obey all instructions of vessels of war of the United States.

ON SIGHTING A SUBMARINE IN THE PRESCRIBED ZONES

14. If a submarine is sighted beyond torpedo range, bring submarine abaft the beam and keep her there. If submarine attempts to close, bring her astern and proceed at highest possible speed.

15. If submarine is sighted close aboard forward of the beam, the greatest safety lies in changing course directly towards the submarine.

16. If submarine is sighted close aboard abaft the beam, the greatest safety lies in turning away from the submarine and proceeding at highest speed.

ON OPENING FIRE IN DEFENCE AGAINST THE UNLAWFUL ACTS OF SUBMARINES

17. Hoist national colours before first shot is fired.

18. Once it has been decided to open fire, do not submit to the gunfire of a submarine so long as the armed guard can continue to fire.

19. Send all persons except bridge force and the armed guard below decks while vessel is under fire.

20. Watch out for torpedoes and manœuvre to avoid them. If unable to avoid them, manœuvre so that they will strike a glancing blow.

THE ARMED GUARD

21. The armed guard is commanded by the senior naval officer on board. He shall have exclusive control over the

military functions of the armed guard, and shall be responsible for the execution of all the regulations given herein governing the employment of the armed guard.

22. The military discipline of the armed guard shall be administered by the naval officer commanding the armed guard.

23. The armed guard shall be subject to the orders of the master of the merchant vessel as to matters of non-military character, but the members of the armed guard shall not be required to perform any ship duties except their military duties, and these shall be performed invariably under the direction of the officer commanding the armed guard.

24. The decision as to opening fire or ceasing fire upon any submarine shall reside exclusively with the naval officer commanding the armed guard.

25. The enlisted personnel of the armed guard shall be quartered and messed together on board both in port and at sea, at the expense of the owners of the vessel on which the armed guard is serving, in a manner satisfactory to the naval officer commanding the armed guard.

26. The naval officer commanding the armed guard shall take precedence next after the master, except that he shall not be eligible for succession to the command of the ship. He shall be quartered and messed on board both at sea and in port at the expense of the owners of the vessel on which he is serving and in a manner appropriate to his precedence next after the master.

27. The master of the merchant vessel shall, on request of the commander of the armed guard, detail members of the crew to handle ammunition, clear decks, and otherwise supplement the service of the gun.

The naval officer commanding the armed guard shall be responsible for :

(a) The condition of the battery and its appurtenances.

(b) The training of the gun's crews and spotters, including members of the ship's force detailed by the master to assist in the service of the gun.

(c) The readiness of the armed guard to perform its duties at all times.

(d) The continuous look-out near each gun by a member of the armed guard.

(e) The making of all reports required by the Navy Department.

(Signed) JOSEPHUS DANIELS,
Secretary of the Navy.

March 13th, 1917.

APPENDIX B

ANALYSIS OF VESSELS INTERCEPTED AND SENT IN BY THE TENTH CRUISER SQUADRON DURING 1916 AND 1917

Nationality	1916		1917	
	Intercepted	Sent in	Intercepted	Sent in
AMERICAN			<i>Up to April 6</i>	
Eastbound . . .	44	39	8	3
Westbound . . .	23	2	8	2
OTHER NEUTRALS :				
<i>Norwegian :</i>				
Eastbound . . .	428	322	217	63
Westbound . . .	290	28	204	12
<i>Swedish :</i>				
Eastbound . . .	144	124	46	24
Westbound . . .	77	20	45	6
<i>Danish :</i>				
Eastbound . . .	171	128	127	41
Westbound . . .	175	26	140	3
<i>Dutch :</i>				
Eastbound . . .	117	91	96	2
Westbound . . .	91	2	107	5
<i>Brazilian :</i>				
Eastbound . . .	1	1	—	—
Westbound . . .	—	—	—	—
<i>Greek :</i>				
Eastbound . . .	1	—	—	—
Westbound . . .	—	—	—	—
<i>Spanish :</i>				
Eastbound . . .	—	—	—	—
Westbound . . .	—	—	1	1
BRITISH AND ALLIED :			<i>From April 7</i>	
<i>American :</i>				
Eastbound . . .	—	—	10	—
Westbound . . .	—	—	6	—

Nationality	1916		1917	
	Intercepted	Sent in	Intercepted	Sent in
<i>British :</i>				
Eastbound . . .	111	—	92	—
Westbound . . .	145	—	92	—
<i>French :</i>				
Eastbound . . .	15	—	2	—
Westbound . . .	12	—	1	—
<i>Russian :</i>				
Eastbound . . .	17	1	17	—
Westbound . . .	25	—	12	—
<i>Belgian :</i>				
Eastbound . . .	—	—	46	—
Westbound . . .	—	—	43	—
<i>Italian :</i>				
Eastbound . . .	—	—	2	—
Westbound . . .	—	—	—	—
<i>Roumanian :</i>				
Eastbound . . .	3	—	3	—
Westbound . . .	2	—	—	—
BRITISH PORTS AND ARCH- ANGEL AND VICE-VERSA :				
Eastbound . . .	141	1	9	—
Westbound . . .	24	—	6	—
VESSELS FROM NARVIK TO ROT- TERDAM AND VICE-VERSA :				
Eastbound . . .	—	—	—	—
Westbound . . .	1	—	—	—
OTHER VESSELS NEITHER EAST NOR WEST BOUND :	402	67	139	10
TRAWLERS	930	37	611	1
Totals	3,390	889	2,090	173

APPENDIX C

NUMBER AND GROSS TONNAGE OF BRITISH MERCHANT
VESSELS AND FISHING VESSELS LOST THROUGH ENEMY
ACTION DURING EACH MONTH OF THE WAR; AND NUMBER
OF LIVES LOST ¹

Year and Month	British Merchant Vessels			British Fishing Vessels		
	No.	Gross Tonnage	Lives lost	No.	Gross Tonnage.	Lives lost
1914.						
August . . .	9	40,254	—	26	4,438	5
September . . .	21	88,219	29	6	1,032	25
October . . .	19	77,805	24	2	283	5
November . . .	5	8,888	—	6	460	42
December . . .	10	26,035	16	5	780	18
Total. . .	64	241,201	69	45	6,993	95
1915.						
January . . .	11	32,054	21	2	222	—
February . . .	14	36,372	30	—	—	—
March . . .	23	71,479	161	1	289	1
April . . .	11	22,453	38	11	1,930	22
May . . .	19	84,025	1,208	32	5,648	32
June . . .	31	83,198	81	60	8,117	26
July . . .	20	52,847	28	39	4,427	26
August . . .	49	148,464	248	38	2,890	9
September . . .	30	101,690	77	8	445	12
October . . .	17	54,156	42	—	—	—
November . . .	32	94,493	118	1	162	2
December . . .	21	74,490	419	—	—	—
Total. . .	278	855,721	2,471	192	24,130	130
1916.						
January . . .	16	62,288	64	7	357	—
February . . .	26	75,860	291	2	68	—
March . . .	26	99,089	73	7	607	9
April . . .	43	141,193	131	3	216	—
May . . .	20	64,521	14	5	201	1
June . . .	16	36,976	64	—	—	—
July . . .	28	82,432	69	36	2,796	2
August . . .	23	43,354	8	13	1,672	9
September . . .	42	104,572	20	38	4,811	—
October . . .	49	176,248	197	9	1,138	—
November . . .	49	168,809	100	15	1,600	8
December . . .	58	182,292	186	6	436	9
Total . . .	396	1,237,634	1,217	141	13,902	38

¹ H.C., No. 199, 1919

APPENDIX C

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Year and Month	British Merchant Vessels			British Fishing Vessels		
	No.	Gross Tonnage	Lives lost	No.	Gross Tonnage	Lives lost
1917.						
January . . .	49	153,666	276	16	2,020	2
February . . .	105	313,486	402	30	3,478	23
March . . .	127	353,478	699	43	3,586	3
April . . .	169	545,282	1,125	41	5,920	14
May . . .	122	352,289	591	19	1,448	18
June . . .	122	417,925	416	21	1,342	—
July . . .	99	364,858	468	18	2,736	6
August . . .	91	329,810	462	5	242	6
September . . .	78	196,212	356	7	245	5
October . . .	86	276,132	608	5	227	19
November . . .	64	173,560	420	3	87	—
December . . .	85	253,087	585	5	413	17
Total. . .	1,197	3,729,785	6,408	213	21,744	113
1918.						
January . . .	57	179,973	291	10	375	1
February . . .	69	226,896	697	12	686	20
March . . .	82	199,458	510	10	293	10
April . . .	72	215,543	489	3	241	—
May . . .	60	192,436	407	16	504	7
June . . .	51	162,990	469	6	639	17
July . . .	37	165,449	202	12	555	3
August . . .	41	145,721	217	13	1,536	—
September . . .	48	136,859	521	1	142	—
October . . .	25	59,229	318	—	—	—
To November 11 . . .	2	10,195	1	1	25	—
Total. . .	544	1,694,749	4,122	84	4,996	58
Grand Total to 11th November 1918 }	2,479	7,759,090	14,287	675	71,765	434

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Abbreviations

A.B.S.	= Armed Boarding Steamer	D.S.M.	= Distinguished Service Medal
A.M.C.	= Armed Merchant Cruiser	H.S.	= Hospital Ship
A.P.	= Auxiliary Patrol	M.L.	= Motor Launch
C.A.M.C.	= Canadian Army Medical Corps	S/M	= Submarine
Cr.	= Cruiser	Sq.	= Squadron
D.S.C.	= Distinguished Service Cross	s.s.	= Steam Ship
		s.v.	= Sailing Vessel

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